NORTH COAST INTEGRATED REGIONAL WATER MANAGEMENT PLAN

PROPOSITION 84 IMPLEMENTATION GRANT PROPOSAL, ROUND 1

ATTACHMENT 7: ECONOMIC ANALYSIS—WATER SUPPLY COSTS AND BENEFITS

Integrated Regional Water Management Program
Applicant: Humboldt County

Attachment 7, Economic Analysis: Water Supply Costs and Benefits

I. Introduction

Unlike many areas of California, the North Coast region continues to support natural resource based economies–including commercial fishing, timber harvesting, recreational tourism and agriculture. While some resource-based industry will likely always exist in the region, the economic focus of the region is undergoing transition and becoming increasingly reliant on service-based economies in addition to natural-resource based economies. This transition has been, and will continue to be, difficult for certain sections of the region, due to the fact that economic resources are limited and therefore, the ability to construct needed water infrastructure is limited. Additionally, while certain sub-areas within the region are economically stable, much of the North Coast is designated as disadvantaged, and is struggling with legacy environmental challenges as well as facing health risks and water supply reliability issues associated with aging water supply and wastewater infrastructure.

Due to limited funding at the county and local levels, all of the jurisdictions within the region face serious challenges to accomplishing statewide water-management objectives, as well as meeting requirements related to state and federal environmental regulations. The North Coast region has relatively intact watersheds, a still viable though degraded salmon fishery, and some of the highest levels of biological diversity in the world. The region is a major destination for Californian, national and international visitors who travel here to enjoy its natural resources and intact watersheds. Because of these intact and functioning ecosystems, the North Coast has a unique opportunity to integrate watershed health with community health and economic vitality. Over the long term, it is much simpler and less expensive to plan and implement solutions to water management that incorporate natural system function–thereby avoiding the regulatory and long term maintenance costs associated with more traditional infrastructure development projects. The North Coast IRWMP framework has provided multi-jurisdictional water-related planning, and financial and technical support to a geographically and socio-economically diverse population. The NCIRWMP process has made great gains in creating a shared vision for the North Coast and has been successful in obtaining financing for implementation of priority projects, however, lack of funding to implement needed public health and ecosystem restoration projects continues to have substantial implications for the local communities, the region, state and nation.

The planning approach in the North Coast region integrates watershed boundaries with jurisdictional boundaries, thereby addressing environmental issues at the ecosystem, habitat and organism level while responding to the socio-economic needs and policy frameworks of human communities. In addition to having a regional geographic focus that mirrors that of the North Coast hydrologic region as defined by DWR and SWRCB, the North Coast continues this planning organization down to the level of Watershed Management Area (WMA), organizing all projects into this framework and responding to the goals and objectives therein. The WMI Watershed Planning Chapter for the North Coast identifies the following as the highest priority activities for the North Coast WMAs:

- Implementing TMDLs for sediment in 16 coastal watersheds
- Completing all Klamath Basin TMDLs by December 2005
- Maintaining the core regulatory program for regulated dischargers, including stormwater
- Developing a monitoring strategy for the region and integrating SWAMP with TMDL monitoring
- Regulating vineyards and timber activities
- Developing policies for runoff from roads
- Maintaining the groundwater cleanup programs for high priority sites
- Fostering watershed groups and citizen monitoring
- Protecting Critical Coastal Areas
- Promote water recycling activities
- Developing a freshwater beach program with the Sonoma Co. Health Department for the Russian River

The North Coast Integrated Regional Water Management Plan (NCIRWMP) process synchronizes statewide priorities related to environmental and economic viability with regional and local knowledge, relationships, project planning and implementation. The major themes of the NCIRWMP are salmonid recovery, protecting and enhancing the beneficial uses of water, environmental justice, and intra-regional collaboration. Regional and project-level economic analyses in the following pages document the strong emphasis on these themes.

The 19 projects included in this North Coast Integrated Watershed Management Plan (NCIRWMP) application under the Proposition 84 Implementation Grant solicitation reflect the ecologic, economic, and social diversity of the North Coast region (the Region). If funded, the projects would improve the functionality and resiliency of the region's water supply. Water supply is broadly comprised of the natural waterways, watersheds and associated ecosystems that produce, store, filter, and convey water for human demands and environmental purposes, and the human-built infrastructure—the pipes, pumps, and reservoirs—that moves water to the places and times where humans demand it. This Attachment presents the costs and water supply-related benefits of the 19 projects.

II. Framework and Methodology

Our estimates of the regional and project-specific water supply-related benefits and costs reflect the marginal, net willingness of Californians to pay, measured in dollars of 2009, for the goods and services that the proposed projects would increase (the benefits) or consume or diminish (the costs).

The proposed projects would yield water supply benefits to the extent that they increase the value of water supply-related goods and services available to Californians. The proposed projects have the potential to increase the value of these goods and services in three ways: by lowering the cost of providing a given supply, by increasing the supply of a given benefit, and by increasing the demand for a given benefit. The projects would produce few goods and services directly; instead, they primarily would

enhance the supply of capital necessary to provide goods and services.[1] Thus, the proposed projects would produce benefits to the extent that they increase the region's stock of capital, and the quantity or types of goods and services that flow from it. The proposed projects may also produce benefits to the extent that they affect the demand for, and, hence, the value of certain goods and services. Consistent with widely accepted professional standards, we consider a broad suite of goods and services, including those whose value comes from indirect or non-use of resources (U.S. Environmental Protection Agency 2009, National Research Council 2004, U.S. Environmental Protection Agency 2000).

To estimate benefits, we:

- Worked with each project sponsor, using a with-vs.-without framework, to describe the expected outcome of each project in terms of the expected net increase in the supply of different types of water supply-related goods and services, the avoided costs of project-related activities, and/or the change in the demand for water supply-related goods and services.
- Reviewed the existing economic literature to identify relevant studies that identify the marginal value to Californians of each type of good and service.
- Selected from the existing literature, where appropriate, a reasonable estimate of the per-unit marginal value of each good or service. In completing this step, we first sought studies that directly measure the marginal value of the specific good or service whose supply the project would increase. If such a study was not available, we then sought studies that measure the marginal value of a good or service similar in terms of geographic location, environmental context, and economic context. In all instances we sought studies that have been peer reviewed.
- Adjusted each estimate of per-unit value of a good or service or avoided cost to its equivalent value in 2009 dollars, using the update factors provided in Table 10 of the *Proposition 84 IRWM Implementation Proposal Solicitation Package.* For the years 1997 to 2001, we used the update factors provided by the Department of Water Resources in the *Frequently Asked Questions: Proposition 84 Implementation Grant Program (Round 1)* document, released December 3, 2010.
- Estimated the annual value of the expected increase in the supply of each type of good or service by multiplying the expected annual increase in the supply times the per-unit value, in 2009 dollars. For avoided costs, we used information from project sponsors to estimate the value of costs the project would reduce or eliminate.

[1] Economists use the term capital to describe resources commonly used to produce things people value (e.g., different types of goods and services). Classifications vary, but most economists generally recognize five types of capital: natural, human-built, human, social, and financial. Natural capital refers to the components of nature, e.g., water, trees, and soil, and the interactions between these components. Human-built capital refers to water-delivery infrastructure, roads, and other tangible goods and infrastructure. Human capital refers to the knowledge and skills embodied in people. Social capital refers to social networks, cultural norms, laws, and political systems. Financial capital refers to money, sources of credit, and stocks traded in markets.

- Assessed the uncertainty embodied in each estimate of annual value for each type of good or service, and determined if it is reasonable to conclude that it offers an unbiased representation of the true value of the good or service. In all cases, we selected an estimate of per-unit value that more likely than not yields an *underestimate of the true value* of a project's benefits.
- Completed an internal review process, to ensure the information we provide gives a reasonable description of the costs and benefits for each project and for the NCIRWMP Proposal as a whole. Participants in the internal-review process included representatives from each project, economic and environmental consultants, the North Coast Regional Partnership's Technical Peer Review Committee, and staff to the NCIRWMP.

To estimate costs—for example, projected expenditures on capital, operations, and maintenance activities—we relied on information provided by project sponsors, following the guidelines presented in the *Proposition 84 IRWM Implementation Proposal Solicitation Package* (Department of Water Resources 2010). Consistent with those guidelines, the cost estimates represent the full cost of the project, inclusive of capital, operations, and maintenance costs, and the opportunity cost of any volunteer labor, land, and other donated inputs required to implement the project.

The regional water supply-related benefits and costs of the proposal, as a whole, are described in Section III, below. The benefits and costs of each project are described in detail in Section IV, below. Many of the projects would produce similar types of benefits. To avoid redundancy, where possible, we have included a complete discussion of the assumptions, sources, and factors contributing to uncertainty for particular economic benefits in the regional costs and benefits section, and referred to it in the discussion of each project-level benefit. Each project-level narrative contains a basic description of each benefit it would produce, which outlines the mechanisms, level of effects, and sources of uncertainty specific to each project. To ensure consistency across similar benefits for each project, the benefit descriptions share similar language from project to project. While this contributes some redundancy to the overall narrative, it is necessary to ensure each project's benefits are described completely.

III. Narrative Description: Regional Costs and Benefits

This section presents the total value of costs and water supply-related benefits that will be generated by the suite of projects proposed for the North Coast region. In it, we also describe the methodologies and assumptions we use to estimate the project-level benefits, where economic quantification was possible. For each regional-level benefit, we describe sources of uncertainty and how the uncertainty might influence the direction and magnitude of the benefit or cost.

A. Regional Project Costs

The present value of the costs for all projects proposed for the North Coast region totals $12,219,228 in 2009 dollars, discounted at a rate of 6 percent per year. This value includes all costs required to complete the projects as described, and generate the benefits identified in the next

section. To the fullest extent available data allows, costs include both financial and non-financial contributions of resources from public and private sources.

We identified the costs, reported for each project in a series of Table 11s provided at the end of this Attachment, based on information provided by project sponsors. In most cases, costs were provided as monetary estimates, which we took as given. For in-kind or voluntary labor, donated land, and donated materials, we either applied a value provided by the project sponsor, or developed an appropriate estimate of the opportunity cost of the resource. For example, unless project sponsors provided another, more appropriate estimate based on an equivalent professional wage, we have valued the opportunity cost of voluntary labor using the current minimum wage, $8.00 per hour, in California, California Department of Industrial Relations 2008), plus an additional 12 percent to include fringe benefits, for a total wage of $8.96 per hour (Pocock and Barker 2005).

B. Total Regional Water-Supply-Related Benefits

The present value of the regional water supply-related benefits for all projects proposed for the North Coast region totals $2,855,930 in 2009 dollars, discounted at a rate of 6 percent per year. This value includes the benefits generated in two categories: annual water supply benefits (Table 12), and other annual water supply benefits (Table 14). None of the projects would generate benefits in the category of annual avoided costs of water supply-related projects (Table 13). These benefits are calculated for each project in a series of Table 12s and Table 14s provided at the end of this Attachment. The total water-supply-related benefits (Tables 12 and 14) are summarized for each project in a series of Table 15s at the end of this Attachment.

1. Annual Water Supply Benefits

Proposed projects would generate water supply benefits by increasing the supply of water available to meet the demand of Californians, or by enabling Californians to obtain water at a lower cost.

Increased Instream Flow for Environmental Purposes (Quantifiable). Nine projects would generate about 614 acre-feet per year of instream flow for environmental purposes:

- 402–Ackerman Creek Habitat Restoration, Pinoleville Pomo Nation
- 345–Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District
- 364–Mendocino Jumpstart Integrated Water Plan, Mendocino County Water Agency/Planning Department
- 393–Russian River *Arundo* Removal and Riparian Enhancement, Sotoyome Resource Conservation District
- 352–Gualala River Sediment Reduction Program, Gualala River Watershed Council
- 444–Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

- 355–Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District
- 441–Waterfall Gulch Transmission Main Project, City of Fort Bragg
- 405–Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project, Redwood Forest Foundation, Inc.

Most of the increases in supply resulting from these projects would occur as higher instream flows during low-flow periods, which typically occur between June and October. The expected duration of the benefit would depend on the expected life of each project, which varies across the projects. Specific assumptions for each project are detailed in Section IV. These higher flows would improve pool rearing habitat, reduce water temperature, and extend downstream migration periods for juvenile salmonids. Depending on the waterway, the additional flows could provide additional goods and services that people value, such as water-based recreation, higher amenities for nearby property owners, and improved water-quality for other water users downstream of the projects.

An economic analysis of water transactions between 1990 and 2003 found that the median price paid in California to acquire water for environmental purposes was $75 per acre-foot (Brown 2007). We use this value, to measure the value of additional water for instream flows to enhance ecosystems, water-quality, and salmon populations for all projects that would generate this benefit. The median value is a better estimator of the true willingness to pay for water supplies than the mean, insofar as some transactions exhibiting extreme values are distorted by political and other factors.

The values we derive from the findings of Brown (2007) embody the uncertainty inherent in the individual study as well as from applying results from past research to future conditions. There is, however, no obvious reason to conclude that the estimate systematically overestimates the true marginal value of water for environmental purposes in the North Coast region. As human populations and incomes grow in California, the marginal value of wild salmonid populations and other benefits derived from instream flows for environmental purposes is likely to increase, as will the value of stream flows that support their continued existence. Because we found no reliable estimate of the rate of increase, we did not fold this increase into our estimates. For these reasons, it seems reasonable to conclude that the value estimates we apply in this analysis underestimate—perhaps substantially—the true value of future increases in water supplies that would result from the proposed projects. The recent implementation of AB 2121, the state's instream flow policy that applies to the North Coast region, creates additional regulatory pressure for maintaining or increasing instream flows, potentially further increasing the demand and associated willingness to pay for instream flows above these estimates.

Using the estimated acre-feet of instream flows the projects would generate and the per-acre-foot value described above, we estimate that the total present value of this benefit at the regional level, in 2009 dollars discounted at 6 percent per year, over a period of 50 years, would be $521,884.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes, and other water users, such as irrigators, who bear increased regulatory pressure and costs to increase instream flows by reducing their own use of water.

Avoided Cost of Water-Supply Purchases (Quantifiable). Two projects would allow water users to avoid purchasing water, valued at $271,779 in 2009 dollars, discounted at 6 percent per year, over lifespan of the project:

- 345–Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District
- 444–Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

The specific assumptions used to value the avoided costs of water purchases are detailed in the project-level descriptions in Section IV. Both projects would avoid water supply purchases by install rainwater catchment tanks to offset or replace existing water supplies. The actual level of benefit achieved from avoided cost of water supply purchases would depend on specific water conditions in any given year. Because landowners are legally required to use the tanks from May through October, however, there is a reasonable level of certainty that, in most years, this benefit is likely to be realized at its fullest extent.

The beneficiaries of this benefit would include the water users who would reduce or eliminate their water-supply purchases with the projects.

2. Other Annual Water Supply Benefits

Avoided Costs of Service Disruption (Quantifiable and Unquantifiable). Three projects would enable Californians to avoid a total present value of $1,418,017, in 2009 dollars, discounted at 6 percent per year, in quantifiable costs associated with a disruption of water supply services:

- 306–Water Treatment System Upgrade, Happy Camp Community Services District
- 362–Blue Lake Fieldbrook Pipeline Support Retrofit Project, Humboldt Bay Municipal Water District
- 357–Highway 96 Stormceptor, Willow Creek Community Services District

The specific assumptions regarding each project's quantifiable and unquantifiable avoided costs are detailed for each project in Section IV. The actual quantifiable avoided costs of a service disruption could be higher or lower than the amount estimated here, given the specific reasons for the service disruption, and the context within which it occurs. There is, however, no obvious reason to conclude

that the estimate systematically overestimates the avoided costs of service disruption. Moreover, the quantifiable portion of the estimated avoided costs of service disruption likely *underestimates* the full avoided cost of potential service disruptions, because it does not include any additional administrative and operations costs that would materialize as water supply-system staff respond to the issues arising from the disruption. It also does not include the costs customers would incur by not having access to water in their homes and businesses, or the costs associated with not having water available for medical, fire-fighting, or other essential services. The existing data are insufficient to estimate these costs, but research in northern California and other places suggests they are likely to be substantially greater than the direct costs associated with provisioning emergency water supplies (Kunreuther, Cyr, Grossi and Tao 2001).

Beneficiaries of this benefit would include the operators and ratepayers in each system, and permanent and transitory customers (e.g., visitors to the community who would not have access to water or services dependent on water).

Avoided Water-Supply Operations Cost (Quantifiable). Two projects would avoid water supply operations costs with a total present value of $449,320, in 2009 dollars, discounted at 6 percent per year:

- 345–Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District
- 441–Waterfall Gulch Transmission Main, City of Fort Bragg

The specific assumptions regarding how each project would allow its water system managers to avoid water supply operations costs are detailed for each project in Section IV. Both projects would reduce operations costs by identifying and repairing leaks in the water system infrastructure. The actual operations-cost savings in any given year would depend on the specific number of leaks that occur, the degree of damage they cause, and the volume they discharge. There is, however, no obvious reason to conclude that the estimate systematically overestimates the avoided water supply operations costs.

Beneficiaries of this benefit would include the operators and ratepayers in each system.

Reduced Electricity Costs Associated with Pumping (Quantifiable). Two projects would allow water users to reduce the amount of water they use, and thereby reduce the costs associated with purchasing electricity to pump water:

- 355–Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District
- 441–Waterfall Gulch Transmission Main, City of Fort Bragg

The total present value of these reduced costs are $55,928, in 2009 dollars, discounted at 6 percent per year. The specific assumptions regarding current pumping costs and how each project would reduce these costs are detailed for each project in Section IV. The actual reduction in pumping costs

in any given year would depend on the actual price of electricity and amount of water that otherwise would have been pumped. There is, however, no obvious reason to conclude that the estimate systematically overestimates the avoided water supply operations costs. The available evidence suggests that electricity rates will escalate faster than they have in the past, particularly since climate change is expected to reduce available water supplies to generate hydropower, and regulations on carbon emissions raise the cost of generating electricity.

The beneficiaries of this benefit would include the irrigators and municipal water-service ratepayers who would pay less each year to pump water.

Avoided Costs Associated with Emergency Repairs (Quantifiable and Unquantifiable). Three projects would enable communities to avoid costs associated with emergency repairs with a total present value of $135,126, in 2009 dollars, discounted at 6 percent per year:

- 306–Water Treatment System Upgrade, Happy Camp Community Services District
- 441–Waterfall Gulch Transmission Main, City of Fort Bragg
- 362–Blue Lake Fieldbrook Pipeline Support Retrofit Project, Humboldt Bay Municipal Water District

The specific assumptions regarding current pumping costs and how each project would reduce these costs are detailed for each project in Section IV. The actual quantifiable avoided costs associated with emergency repairs could be higher or lower than the amount estimated here, given the specific reasons for the repairs, and the emergency context within which they occur. There is, however, no obvious reason to conclude that the estimate systematically overestimates the avoided costs that would result from the repairs.

Beneficiaries of this benefit would include the ratepayers in each system. Other potential beneficiaries include taxpayers at the state and federal level, who incur costs through disaster relief agencies such as FEMA, and other emergency-service entities, for example the Red Cross.

IV. Narrative Description: Individual Project Costs and Benefits

This section includes a narrative description for each project, of the relevant environmental and economic conditions with and without the project, the project's costs and its water supply-related benefits. Projects are presented alphabetically by Watershed Management Area, in keeping with the commitment of the NCIRWMP to utilize watershed based planning.

A. Russian River/Bodega WMA

402–Ackerman Creek Habitat Restoration, Pinoleville Pomo Nation

1. Project Description and Background

The Ackerman Creek Habitat Restoration Project would remove invasive plants from about 0.4 acres of riparian habitat and would plant native vegetation on four acres of riparian habitat along 0.63 miles of Ackerman Creek. Additionally, this project expands upon existing efforts; it will make

accessible more than three miles of recently restored upstream habitat. Without the project, invasive plants such as *Arundo* and Himalayan blackberry (*Rubus discolor*) would continue to spread across the landscape, further decreasing the quality of riparian and aquatic habitat in the area. With the project, four acres of riparian habitat would be restored by removing invasive plants from 0.4 acres and planting native vegetation including trees, shrubs, and grasses that would enhance instream flows and riparian function throughout the four-acre area and improve aquatic habitat in Ackerman Creek. Native plant species have been shown to provide better shade, erosion control, insect habitat, and other wildlife habitat. Replacing non-native species with native species in the riparian corridor should improve habitat for salmonids and other wildlife, and improve erosion control and increase carbon sequestration.

2. Project Costs

The present value of the project's costs, which would occur between 2010 and 2015, is $262,747 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project. The project would require additional administrative, operation, maintenance, and replacement costs between 2011 and 2015. Table 11-402 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate water supply-related benefits as described below. Table 12-402 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). The project would remove *Arundo* from 0.4 acres of riparian habitat. Research has shown that, per acre, *Arundo* absorbs about 3.8 acre-feet of water more than native vegetation (Glasser 2003). By replacing *Arundo* with native vegetation on 0.4 acres of land, the project would increase instream flow in the Russian River by 1.52 acre-feet per year. Increased instream flow has many potential benefits including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply.

Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[2] Without additional information, we assume the increased instream flow would be left in the Russian River and would thus be valuable insofar as it improves aquatic habitat for salmon.

[2] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations and biological diversity. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows and biodiversity for environmental purposes.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

345–Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District

1. Project Description and Background

The Bodega Bay Water Resource Management Project would restore instream and riparian habitat, provide rainwater collection tanks for municipal and rural agricultural/domestic users who agree to reduce water withdrawals from streams, initiate leak detection and repair activities in the communities of Valley Ford and Bodega, initiate public education efforts, and increase monitoring activities in the region's watersheds. Without the project, excess sediment from denuded riparian areas would deposit into salmon-bearing streams, stream reaches within the Estero Americano and Salmon Creek watersheds would provide lower-quality aquatic habitat, property owners would continue to divert water from streams during low-flow periods for agricultural and municipal uses, and water systems would continue to operate inefficiently due to leaking infrastructure. With the project, excess sediment would be removed or stabilized through riparian restoration and fencing, which would improve salmonid habitat, potentially increasing salmonid populations. Instream flows to support salmonids and environmental beneficial uses would increase as municipal and agricultural water users would rely on locally-collected sources of water, and leaks in water supply infrastructure would be repaired. Rural agricultural/domestic water users who receive rainwater-collection tanks would pay less for water, and water systems within the communities of Valley Ford and Bodega would experience lower operation costs because they would not treat water lost to leakage.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2027, is $1,046,088 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require three years of maintenance costs to secure restoration-related benefits, and annual operation and maintenance costs for the expected life of the rainwater-catchment tanks. Table 11-345 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits and annual other water supply benefit described below. Tables 12-345 and 14-345 present the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). By installing rainwater-collection tanks for municipal and rural agricultural/domestic users, the project would keep 400,000 gallons (1.23 acre-feet) of water from being diverted out of Salmon Creek and Estero Americano each year. The leak detection and repair program in the communities of Valley Ford and Bodega would save an additional 75,000 gallons (0.23 acre-feet) of water each year from being diverted from these waterways. This water, 1.46 acre-feet per year, would instead be left instream to benefit salmon, water-based recreation, and the ecosystem during low-flow summer months. The benefit provided by the tanks would persist for their 15-year expected lifespan. The benefit provided by the leak-detection and repair program would persist indefinitely.

The literature suggests that water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot.[3]

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

Avoided Water Supply Purchases (Quantifiable). By installing rainwater-collection tanks for rural agricultural/domestic users, the project would allow the tank owners to avoid purchasing water for water supply, once their wells run dry. The rainwater-collection tanks would provide rural agricultural/domestic users with 200,000 gallons of non-potable water. Half of this water would displace water diverted from streams through shallow-gallery wells, as described in the previous benefit; half of this water—100,000 gallons—would replace water the landowners would otherwise purchase once their wells run dry. The total avoided cost of these purchases would be about $24,700 per year, for the 15-year expected lifespan of the tanks.

The actual level of benefit achieved from avoided cost of water supply purchases would depend on the specific water conditions in any given year, and could be less than this amount. Because landowners are legally required to use the tanks from May through October, however, there is a

[3] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

reasonable level of certainty that, in most years, this benefit is likely to be realized at its fullest extent.

The direct beneficiaries of this benefit would be the land owners who receive rainwater catchment systems and would no longer have to purchase water during the summer months when the tanks are in use.

b. Other Annual Water Supply Benefits

Avoided Water-Supply Operations Cost (Quantifiable). By implementing a leak detection and repair program in the communities of Valley Ford and Bodega, the project would save 75,000 gallons of water from being processed through the water treatment plant. The total avoided treatment costs would be $30,000 per year.

The direct beneficiaries of this benefit would be the water system operators and ratepayers in the communities of Valley Ford and Bodega.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

292–Lower Russian River Water Quality Improvement Project, Sotoyome Resource Conservation District

1. Project Description and Background

The Lower Russian River Water Quality Improvement Project would upgrade and/or decommission 11.7 miles of road and stream crossings in the Austin Creek watershed to accommodate 100-year storm flows, educate property owners on best practices for rural road improvement, provide subsidies for septic system evaluations, and educate property owners about preventing pathogenic pollution from aging septic systems. Without the project, sediment would deposit into salmon-bearing streams and pathogenic pollution from private septic systems would cause ongoing water quality problems in the Austin Creek and Lower Russian River watersheds. Insufficient monitoring activities would mean that limited information would be available about the quantity, timing, and source of the pollution. With the project, sediment would be removed or stabilized, reducing the overall amount entering the watershed's water bodies. Septic system upgrades would reduce the amount of pathogenic pollution adversely affecting the Lower Russian River. Property owners and land managers would be empowered with local water quality information, providing them with the capacity to more effectively design and adapt programs that target water quality issues.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2012, is $357,360 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would not require any ongoing administrative, operations, maintenance, replacement, or other costs. Table 11-292 lists the

estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

364–Mendocino Jumpstart Integrated Water Plan, Mendocino County Water Agency/ Planning Department

1. Project Description and Background

The Mendocino Jumpstart Integrated Water Plan would implement seven low-impact development (LID) and sustainable practice projects and would provide additional educational opportunities to the community via college courses and county workshops. Without the project, the County's current irrigation and stormwater-management practices would continue in a business-as-usual manner; the same level of pollutants would be discharged to Orrs Creek, and potable water would be utilized during the summer months for landscape and sports field irrigation. With the project, stormwater runoff from the County campus parking lot would be treated with LID techniques before entering Orrs Creek, which would reduce pollutants and sediment in the watershed. The College's sports field would use recycled irrigation water, two rainwater catchment tanks would save additional water, and the County would convert from grass to xeric landscape, resulting in reduced water demand during the dry summer months. The project also would build a bioswale/wetland and vernal pool to create new habitat while treating stormwater before entering Hensley Creek and would provide educational opportunities at Mendocino College to promote learning and skill development with these and other sustainable techniques.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2013, is $406,656 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would incur some administrative costs, which would also occur between 2011 and 2013. Table 11-364 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits, as described below. Table 12-364 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Water Supply for Instream Flow (Quantifiable). The project would increase instream flows to the Russian River by between 6.34 and 18.70 acre-feet per year. These savings would occur as a result of a decrease in demand from the water conservation measures at the County buildings, the College rainwater catchments, and the College irrigation recycling. A portion of

these benefits (less than 1 acre-foot), attributable to the turf to xeric conversion, would accrue indefinitely, so we extend the benefit over 50 years. The increase in instream flows attributable to the rainwater-catchment tanks would accrue over their 20-year lifespan and the college sports field irrigation recycling project's lifespan is 30 to 50 years. We use the lower range of these estimates when calculating yearly increases in instream flows. The timing of the reduced demand for this project would occur during the typical irrigation season, which is from April through October.

Increased instream flow has many potential benefits, including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply. Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmonid habitat, has a value of $75 per acre-foot (Brown 2007).[4] Without additional information, we assume the increased instream flow will be left in the Russian River, and would thus be valuable insofar as it improves aquatic habitat for salmon and provides other ecosystem benefits.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

Please see Attachment 9 for the flood-damage-reduction benefits this project would generate.

374 & 376–Nissah-Kah Creek Fish Passage, Hopland Band of Pomo Indians

1. Project Description and Background

The Nissah-Kah Creek Fish Passage project would improve fish passage for all age classes of steelhead and rainbow trout on two culverts of Nissah-Kah Creek. Without the project, steelhead and rainbow trout do not have access to the upper reaches of Nissah-Kah Creek. With the project, the culverts would accommodate both upstream and downstream passage for adult and juvenile steelhead trout and would provide a large improvement in the quantity and quality of habitat, potentially increasing the populations and survival potential for all life stages of steelhead and rainbow trout.

[4] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

2. Project Costs

The present value of the project's costs, which would occur between 2009 and 2013, is $948,396 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project The project would use five volunteers for monitoring before and after the culvert improvements. Each volunteer would complete a four-hour survey, four times per year for the years during construction and two years following. Since the volunteers would be individuals with no specialized experience or expertise, their time is valued at $8.96 per hour, the current minimum wage in California plus 12% to include fringe benefits. Table 11-374 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

393–Russian River Arundo Removal and Riparian Enhancement, Sotoyome Resource Conservation District

1. Project Description and Background

The Russian River *Arundo* Removal and Riparian Enhancement Project would remove *Arundo donax*, an invasive plant species, from 150 acres of riparian habitat and would restore that area as well as an additional 50 acres, with native vegetation, spanning a total of five linear miles along the Russian River. Without the project, the *Arundo* would remain intact, and would continue to spread across the landscape, further decreasing the quality of riparian and aquatic habitat in the downstream portions of the watershed. With the project, 200 acres of riparian habitat would be restored to enhance riparian function and *Arundo* would be removed from 150 acres, increasing instream flow and decreasing the likelihood of a catastrophic fire event.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2013, is $255,100 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would not require any ongoing administrative, operations, maintenance, replacement, or other costs. Table 11-393 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits, as described below. Table 12-393 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). The project would remove *Arundo* from 150 acres of riparian habitat. Research has shown that, per acre, *Arundo* absorbs about 3.8 acre-feet of water more than native vegetation (Glasser 2003). By replacing *Arundo* with native vegetation on 150 acres of land, the project would increase instream flow in the Russian River by 570 acre-feet per year. Increased instream flow has many potential benefits including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply.

Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[5] Without additional information, we assume the increased instream flow would be left in the Russian River and would thus be valuable insofar as it improves aquatic habitat for salmon.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations and biological diversity. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows and biodiversity for environmental purposes.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

396–Copeland Creek Watershed Detention/Recharge, Habitat Restoration, and Steelhead Refugia Project, Sonoma County Water Agency

1. Project Description and Background

The Copeland Creek Watershed Detention/Recharge, Habitat Restoration, and Steelhead Refugia Project would remove invasive, non-native vegetation and restore 21 acres of riparian habitat, and strategically remove 10,395 tons of sediment from Copeland Creek. The project also would begin planning for off-stream stormwater detention basins to be constructed in the future, and would initiate a collaborative process among stakeholders in the region to efficiently coordinate restoration and environmental improvement projects. Without the project, invasive vegetation will remain intact, and would continue to spread across the landscape, further decreasing the quality of riparian and aquatic habitat in the area. Sediment deposition would continue to impose

[5] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

management costs on the Sonoma County Water Agency (SCWA) and other costs on downstream water users. A variety of environmental, landowner, and agency stakeholders would continue to initiate restoration activities in an ad-hoc, uncoordinated way. With the project, 21 acres of riparian habitat would be restored by removing invasive plants and planting native riparian vegetation including trees, shrubs, and grasses that would enhance riparian function. Over ten thousand tons of sediment would be removed from the area, thus avoiding future costs associated with that sediment entering the waterway, while improving the geomorphic functioning of the reach and fish passage. Sediment deposition would decrease, reducing the costs of future sediment-removal activities and reducing the water-quality-related costs incurred by downstream users. A program to educate and coordinate resources and information among stakeholders working in the Copeland Creek Watershed would enhance the human and social capital in the region, and facilitate more efficient planning and implementation of future restoration and water-quality-related projects.

2. Project Costs

The present value of the project's costs, which would occur between 2009 and 2058, is $2,103,784 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project through 2014 as well as recurring administrative, operation, maintenance, and replacement costs through 2058. The costs also include the value of 480 hours of volunteer labor, distributed between 2011 and 2014. Since the volunteers would have no specialized experience or expertise, their time is valued at $8.96 per hour, the current minimum wage in California plus fringe benefits (California Department of Industrial Relations 2008). Table 11-396 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

B. Klamath WMA

289–Camp Creek Habitat Protection-Road Decommissioning Implementation Project, Karuk Tribe

1. Project Description and Background (With and Without Conditions)

The Camp Creek Habitat Protection-Road Decommissioning Implementation Project would remove 16 miles of road in the culturally and ecologically significant Camp Creek Watershed. Without the project, erosion and failure of the roads would continue to contribute sediment to the watershed's salmon-bearing streams and disrupt the ecological and hydrological integrity and connectivity of the watershed. With the project, road-decommissioning would remove unstable fill material, re-establish natural hydrologic patterns, and restore 2.5 acres of upland habitat and 2 stream miles of riparian habitat with native grasses that would encourage the re-establishment of other native plants and wildlife. The project funding would also help leverage other sources of funding to accomplish additional sediment removal and road decommissioning activities in the watershed.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2013, is $341,625 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would not require any ongoing administrative, operations, maintenance, replacement, or other costs. Table 11-289 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

311–Indian Creek Sewer Pipeline Crossing, Happy Camp Sanitary District

1. Project Description and Background

The Indian Creek Sewer Pipeline Crossing would decommission an existing sewer pipeline that is exposed in the stream bed of Indian Creek, and replace it with a new sewer pipe crossing. Without the project, there is a high likelihood that the aging pipeline would fail within 50 years, discharging untreated sewage directly into Indian Creek, which flows into the Klamath River. This raw sewage would threaten fish populations, recreation, and other ecosystem services provided by these waterways. Pipeline damage would also interrupt wastewater collection services for customers within the Happy Camp Sanitary District. With the project, the risk of a sewer pipe failure would be reduced because the upgraded pipeline would be constructed outside of the 100-year floodplain. This would increase the reliability of the system and help protect ecosystem services provided by Indian Creek and the Klamath River.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2031, is $891,165 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual operations and maintenance costs for each year of its expected 20-year life. Table 11-311 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

306–Water Treatment System Upgrade, Happy Camp Community Services District

1. Project Description and Background

The Happy Camp Water Treatment System Upgrade would replace critical infrastructure for the water treatment system in Happy Camp, including adding a new filtration system and relocating electrical equipment out of the 100-year floodplain. Without the project, Happy Camp's water system would be out of compliance with federal and state drinking water rules when the State of California adopts EPA's new Long-Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), and

would remain vulnerable to failure in the event of a flood. With the project, the water system would comply with the new LT1ESWTR, provide higher-quality water to its customers, and would be less susceptible to failure during flood events.

2. Project Costs

The present value of the project's costs, which would occur between 2010 and 2031, is $569,004 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual operations and maintenance costs for each year of its expected 20-year life. Table 11-306 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate other water supply benefits, as described below. Table 14-306 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Other Annual Water Supply Benefits

Avoided Costs of Service Disruption (Quantifiable). The project would upgrade and move electrical equipment out of the 100-year floodplain, which would reduce the risk of service disruption for the Happy Camp community Services District's (the District) customers. The equipment is located within the 100-year floodplain, but District operators estimate, because of local conditions, it is susceptible to flooding in the 10-year flood event. Although difficult to quantify given the uncertainty regarding the nature of a potential failure, the District estimates that providing emergency supplies of water for all of its customers would cost about $2,800 per day. The duration of the disruption would depend on how soon the District could obtain the necessary parts to repair the system, which could be between several days and several months. The District has storage capacity in the distribution system that could provide water to customers for about a week, if customers limited their daily consumption of water. In the past, however, a leaking pipe drained the storage system before it could be used for an emergency supply of water, so the ability to rely on the existing storage is somewhat uncertain. For this analysis, project sponsors estimate the District would need to provide emergency water supplies for one week, so the total cost to provide emergency water supplies would be $19,600. Because the likelihood of a 10-year flooding event occurring is about 10 percent in any given year, we adjust the value of this benefit to reflect this annual probability.

This estimate likely *underestimates* the full avoided cost of a service disruption, because it does not include any additional administrative or operations costs for District staff to respond to the emergency. It also does not include the costs customers would incur by not having access to water in their homes and businesses, or the costs associated with not having water available for medical or fire-fighting needs. The available data are insufficient to estimate these costs, but research in northern California and other places suggests they are likely to be substantially

greater than the direct costs associated with provisioning emergency water supplies (Kunreuther, Cyr, Grossi and Tao 2001).

The beneficiaries of this benefit would include the Happy Camp Community Services District ratepayers, and permanent and transitory customers (e.g., visitors to the community who would not have access to water or services dependent on water).

Avoided Costs Associated with Emergency Repairs (Unquantifiable). Should the District's electrical equipment fail during a flood event or other emergency, the cost associated with making repairs during an emergency would be higher than under normal conditions, because of the need to work quickly and secure parts quickly, which could require paying workers overtime and more expensive shipping costs to deliver replacement parts. Moreover, during an emergency, labor is often more scare and there is greater difficulty securing and delivering equipment due to regional flood damage, road washouts, and greater overall demand for scare resources from other emergency repairs elsewhere. Data are insufficient to estimate the increased costs associated with making repairs under emergency conditions, but the District's previous experiences suggest that they could be considerably higher than under non-emergency conditions.

The beneficiaries of this benefit would include the Happy Camp Community Services District ratepayers.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

C. North Coast Rivers WMA

408–Del Norte Agricultural Enhancement Program, Del Norte Resource Conservation District

1. Project Description and Background

The Del Norte Agricultural Enhancement Program would assist dairies in the Smith River watershed upgrade their facilities, improving their methods for collecting, storing, treating, and using manure-based wastewater. Without facility upgrades, these dairies would be in non-compliance with upcoming regulations under the Clean Water Act. Without the project, the dairies would either upgrade their facilities with their own funds, when and if they become available in the future, or incur fees and potential penalties for noncompliance. In our analysis, we assume these dairies would not upgrade their facilities. Pathogen and pollutant-contaminated wastewater would continue to discharge into the Smith River watershed, reducing the quality of recreation, wildlife habitat, and increasing costs for downstream users to treat water and comply with regulations. With the project, the dairies would install waste-management systems, which would reduce pathogens and other pollutants in the Smith River watershed, improving the quality of recreation and wildlife habitat, and reducing the costs for downstream water users and regulators charged with enforcing water-quality and dairy-waste-management regulations.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2012, is $454,541 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project. The project would also use 360 hours of in-kind labor. Project sponsors suggest that these laborers would have specialized skills and experience and would otherwise earn $65 per hour. The project would not require any ongoing administrative, operations, maintenance, replacement, or other costs. Table 11-408 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

352–Gualala River Sediment Reduction Program, Gualala River Watershed Council

1. Project Description and Background

The Gualala River Sediment Reduction Program would address sediment erosion on 12 miles of roads within the Gualala River watershed, implement salmonid habitat improvements, and provide educational forums and information for landowners and others to learn about conservation and restoration practices. Without the project, excess sediment from unstable roads would deposit into salmonid-bearing streams and adversely affect salmonid populations, and stream reaches in the Gualala River would provide lower-quality aquatic habitat. With the project, sediment would be removed or stabilized, reducing the overall amount entering the Gualala River. The project would improve salmonid habitat in 12 miles of stream through restoration activities that introduce large woody debris into the stream channels. Property owners and land managers would be empowered with information to more effectively address sources of water pollution and other conditions that adversely affect the region's water bodies.

2. Project Costs

The present value of the project's costs, which would occur between 2009 and 2016, is $807,014 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual administrative and maintenance costs for the first five years of operation. Table 11-352 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate water supply benefits, as described below. Table 12-352 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Unquantifiable). The project's sediment reduction and salmonid habitat improvement activities would increase streamflows during the summer. Monitoring of past restoration efforts in the watershed similar to the project have shown that flows–both on the surface and in the hyporheic zone–increase in the years following restoration projects. Data are currently unavailable to quantify the expected increase in instream flows in the project area.

The literature suggests that water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[6] If we could quantify the change in instream flow arising from the project, we would apply this value.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

444–Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

1. Project Description and Background

The Mattole Integrated Watershed Management Initiative would install seven 50,000-gallon water-storage systems in the upper mainstream Mattole River, negotiate forbearance agreements with six private landowners to increase instream flow during periods of low flow, implement water efficiency improvements, leak-detection, and overflow prevention resulting in 311,500 gallons (0.96 acre-feet) of decreased water use per year, remove invasive vegetation from 12.5 acres of riparian habitat, restore a total of 50 acres of riparian habitat, prevent the deposition of 1,500 cubic yards of sediment per year, and implement a coho rearing program. Without the project, invasive non-native vegetation would continue to spread across the landscape, reducing the ability of native plants and wildlife to thrive. Water users would continue to withdraw water from the Mattole River, even during periods of seasonal low flow (July to September), decreasing the quality of aquatic habitat and integrity of salmon populations in the area. With the project, the quality of riparian and aquatic habitat in the area would improve, less sediment would erode into the Mattole River, and salmon

[6] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

populations would increase due to improved riparian and in-stream habitat, increased instream flow, and the implementation of a coho-rearing program.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2013, is $261,669 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project. The costs also include administrative, operations, and maintenance costs between 2011 and 2013. The project would also use 1,440 hours of volunteer labor from 2011 to 2013. Since the volunteers would have no specialized experience or expertise, their time is valued at $8.96 per hour, the current minimum wage in California plus fringe benefits. Table 11-444 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits, as described below. Table 12-444 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). The project would install seven 50,000-gallon water-storage systems in the upper mainstream Mattole River, negotiate forbearance agreement with six private landowners, and implement water efficiency improvements, leak detection, and overflow prevention resulting in an increase of 2 acre-feet per year, primarily during dry summer months.

Increased instream flow has many potential benefits, including enhanced aquatic habitat, improved recreational benefits, and increase municipal, industrial, and agricultural water supply. Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[7] Since the primary purpose of the project impact on instream flow is to improve aquatic habitat for salmon, we assume the increased instream flow has a value of $75 per acre-foot.

The beneficiaries of this benefit would include several groups of stakeholders including commercial and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as whitewater rafters and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

[7] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

Avoided Water Supply Purchases (Quantifiable). The project would install seven 50,000-gallon water-storage systems in the upper mainstream Mattole River, negotiate forbearance agreement with six private landowners, and implement water efficiency improvements, leak detection, and overflow prevention decreasing private water-supply purchases by 90,000 gallons per year. These water-supply purchases cost $0.06 per gallon of water. The avoided cost of these purchases would be about $5,400 per year.

The actual level of benefit achieved from avoided cost of water-supply purchases would depend on the specific water conditions in any given year, and could be less than this amount. Because of the water-use guidelines in the forbearance agreements, however, there is a reasonable level of certainty that, in most years, this benefit likely would be realized at its fullest extent.

The direct beneficiaries of this benefit would be the landowners participating in the forbearance agreements who would no longer have to purchase water during the summer months.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

358–Mendocino Headwaters Integrated Water Quality Enhancement Project, Mendocino County RCD

1. Project Description and Background

The Mendocino Headwaters Integrated Water Quality Enhancement project would implement water quality and habitat enhancement projects in three watersheds: the Little North Fork Big River; the Upper Rancheria Creek sub basin of the Navarro River; and the Upper Mainstem Russian River. Without the project, five invasive plant species would continue to spread in the riparian zone on the upper mainstem of the Russian River, which would threaten the viability of riparian corridors and five stream crossings would impede fish passage and contribute to sediment deposition within the watershed. With the project, salmonids would have access to an additional 1.26 miles of suitable habitat, a total of 6,814 cubic yards of sediment would be removed from the Little North Fork Big River and Upper Rancheria Creek watersheds, and the upper mainstem of the Russian River would enjoy an additional two acres of riparian habitat.

2. Project Costs

The present value of the project's costs, which would occur between 2010 and 2032, is $628,941 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require maintenance and replacement costs for each year of the project's expected life. Two volunteer graduate students would conduct five annual inspections of project components between 2013 and 2017. The value of their time, estimated at $15 per hour for 8 hours per day, is $240 per inspection (project sponsor's estimate, based on graduate-student labor rates). These opportunity costs are included in the maintenance costs. The value of a portion of the rock needed to install the stream crossings would be donated for the project. This cost is included with Other costs. Table 11-358 lists the estimated

value of the costs, by category, in the years they would occur, and calculates their total present value.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

355–Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District

1. Project Description and Background

The Real-Time Weather Data for Irrigation Water Management project would install a California Irrigation Management Information System (CIMIS) station in Del Norte County. The station would make data on evapotranspiration and other local climatic conditions available to the public and accessible through the internet. Without the project, irrigators would make decisions about irrigation water use without access to real-time data on local climatic conditions relevant to estimating crop water needs. With the project, irrigators would have access to such information, and would be able to make better-informed decisions about when and how much to irrigate. This would reduce water withdrawals used for irrigation each year from the Smith River watershed.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2015, is $19,005 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual operation and maintenance costs for each year of operation. The costs also include the opportunity cost of the land the CIMIS station would occupy, a small portion of pasture that otherwise would produce benefits worth about $240 per year. Table 11-355 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits and annual other water supply benefits, as described below. Tables 12-355 and 14-355 present the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Water Supply for Instream Flow (Quantifiable). By providing irrigators with the information they need to make more efficient decisions about irrigation-water use, the project would increase water flows in the Smith River Plain by 13 acre-feet per year, during the critical months of July, August, and September.

Increased instream flow has many potential benefits, including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply. Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-

foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[8] Without additional information, we assume the increased instream flow will be left in the Smith River Plain and would thus be valuable insofar as it improves aquatic habitat for salmon and other ecosystem services.

These benefits would persist for the life of the project, five years, and could potentially continue for many more years, to the extent that the irrigators who benefit from the knowledge and introduced through the project likely would change their behavior and continue to employ more efficient irrigation techniques long after the CIMIS station is no longer operating. There is some uncertainty, however, that this would occur, so benefits beyond the five-year operating timeframe of the CIMIS station are not quantified.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

b. Other Annual Water Supply Benefits

Reduced Electricity Costs Associated with Pumping (Quantifiable). By providing information that allows irrigators to use less water, the project would also allow irrigators to reduce the costs associated with electricity used when running irrigation pumps. Electricity costs for pumping are estimated at between $35 and $50 per acre-foot of water pumped. Using the lower end of this estimate, the project would save $455 per year in pumping costs.

These benefits would persist for the life of the project, five years, and could potentially continue for many more years, to the extent that the irrigators who benefit from the knowledge and introduced through the project likely would change their behavior and continue to employ more efficient irrigation techniques long after the CIMIS station is no longer operating. There is some uncertainty, however, that this would occur, so benefits beyond the five-year operating timeframe of the CIMIS station are not quantified.

The beneficiaries of this benefit would include the irrigators who would pay less each year to pump water.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

[8] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

441–Waterfall Gulch Transmission Main Project, City of Fort Bragg

1. Project Description and Background

The Waterfall Gulch Transmission Main project would replace the 50-year-old Waterfall Gulch Raw Water Transmission Main with a new pipe (PVC C900 Class 235) measuring 5,400 feet in length and 10 inches in diameter. Without the project, the City of Fort Bragg (City) would continue to lose treated water with increasing frequency and severity through cracks and leaks in the water main line, at an initial rate of 15,000 gallons per day. With the project, the City would no longer lose water through leaks and would obtain more water from the Waterfall Gulch supply, which is of higher quality and relies on gravity-flow transportation rather than electrical pumps.

2. Project Costs

The present value of the project's costs, which would occur between 2010 and 2011, is $708,771 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project. The project would not require any ongoing, operations, maintenance, replacement, or other costs, but would require some initial administrative costs. Table 11-441 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water Supply-Related Benefits

This project would generate annual water supply benefits and other water supply benefits, as described below. Tables 12-441 and 14-441 present the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water Supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). Increased water available in the Noyo River as a result of the proposed project would provide a bypass during periods of low flows for potential fish movements. Project sponsors expect the reduction in leaks would save 15,000 gallons per day or about 16.8 acre-feet per year, and this water would directly benefit instream flows in the Noyo River, enhancing aquatic habitat.

Increased instream flow has many potential benefits, including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply. Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown 2007).[9] Without additional information, we assume the increased instream flow will be left in the Noyo River, and would thus be valuable insofar as it improves aquatic habitat for salmon.

[9] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

b. Other Annual Water Supply Benefits

Avoided Water-Supply Operations Cost (Quantifiable). The City spends up to $75,000 annually for materials and services to maintain all of the City's water transmission lines and any raw water and distribution lines. Of these costs, the City spends an average of $4,200 per year to find and repair leaks in the line. These costs include the staff time spent walking the line and additional labor costs for repairing leaks based on normal business hours. To calculate the operations costs the project would avoid, we use $4,200 per year. If a leak occurs after business hours or on the weekend, labor costs would be higher, so this is a conservative estimate.

The direct beneficiaries of this benefit would be the water system operators and ratepayers in the City of Fort Bragg.

Any water discharge from the raw water transmission line percolates into existing soils or runs off into any adjacent drainage facilities; the quantity of this flow is difficult to determine. It is possible that preventing future leaks would affect other water users, reduce aquifer recharge, or adversely affect ecosystems. Residents who live in the vicinity of the raw water transmission line are dependent upon wells for domestic water, but these wells use water from a shallow aquifer and should not be directly impacted by a reduction in water discharge from the raw water main. As a result, City staff does not believe that stopping any leaks would impact other water users.

Reduced Electricity Costs Associated with Pumping (Quantifiable). Based on PG&E analysis, the pumping cost from the Noyo River during summer months averages $5,670 per month. During winter months, when demand is lower, these costs average $4,562 per month. The project would reduce these costs by $100 to $1,000 per month, with the higher savings representing avoided costs in the summer months. To calculate the avoided electricity costs associated with the project, we assume a savings of $1,000 per month in June, July, and August and a savings of $100 per month in the remaining nine months of the year, for a total annual power cost savings of $3,900 per year.

The direct beneficiaries of this benefit would be the water system operators and ratepayers in the City of Fort Bragg.

Avoided Costs Associated with Emergency Repairs (Quantifiable). The City pays an average of $3,000 per incident for labor and materials to repair line breaks, an amount which varies depending on the size and severity of the break. The City does not track these emergency costs on an annual basis, but the costs represent only a small portion of the entire maintenance

budget. To estimate these avoided costs, we assume an average of one incident per year with average costs associated with labor and materials, extended over the project lifespan.

The direct beneficiaries of this benefit would be the water system operators and ratepayers in the City of Fort Bragg.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

D. Humboldt Bay WMA

362–Blue Lake Fieldbrook Pipeline Support Retrofit Project, Humboldt Bay Municipal Water District

1. Project Description and Background

Humboldt Bay Municipal Water District (HBMWD) supplies domestic water to the City of Blue Lake and the Fieldbrook Glendale Community Services District (FGCSD). The Blue Lake FGCSD pipeline currently crosses the Mad River via a 14-inch ductile iron pipeline attached to a North Coast Railroad Authority (NCRA) bridge. The proposed project would replace the current pipeline with an aerial crossing for a new 14-inch diameter pipe, which would meet modern seismic codes and be located outside of the 100-year floodplain. Without the project, a moderately sized earthquake could pose a significant risk to the water supply by collapsing the Mad River Bridge, which is in substandard condition and near the end of its functional life. If the bridge collapses, HBMWD would need to make emergency repairs to the pipeline after the earthquake, which would disrupt water and wastewater service to the City of Blue Lake and the FGCSD. If a fire occurred while water service was disrupted after an earthquake, major damage to the community could result. With the project, communities and state and federal emergency-service agencies would avoid costs associated with repairing the pipeline after an earthquake, avoid costs associated with potable water service loss and wastewater service loss, and avoid fire damage caused after earthquake event when loss of water service occurs concurrently.

Under five different earthquake scenarios, the District would experience the following expected losses without the proposed project:

Table 362-1. Costs Associated with Five Different Earthquake Scenarios, Without the Proposed Project

Earthquake Scenario	I	II	III	IV	V
Annual Probability	0.9	0.6	0.11	0.1	0.9
Recurrence Interval	38	64	431	476	532
Repair Cost (dollars)	$46,500	$75,500	$458,000	$1,603,580	$1,603,580
Loss of Service (days)	2	4	14	60	120
Fire damage (dollars)	$0	$6,135,480	$6,135,480	$6,135,480	$6,135,480

Source: Humbolt Bay Municipal Water District

Under five different earthquake scenarios, the District would experience the following expected losses with the proposed project:

Table 362-2. Costs Associated with Five Different Earthquake Scenarios, With the Proposed Project

Earthquake Scenario	I	II	III	IV	V
Annual Probability	0.9	0.6	0.11	0.1	0.9
Recurrence Interval	38	64	431	476	532
Repair Cost (dollars)	$0	$0	$0	$0	$0
Loss of Service (days)	0	0	0	1	1
Fire damage (dollars)	$0	$0	$0	$0	$0

Source: Humbolt Bay Municipal Water District

2. Project Costs

The present value of the project's costs, which would occur between 2010 and 2058, is $1,622,146 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual administration, operations, and maintenance costs for each year of the project's expected life. Table 11-362 lists the estimated value of the costs, by category, in the years they would occur and calculates their total present value.

3. Total Water supply-Related Benefits

This project would generate other water supply benefits, as described below. Table 14-362 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Other Annual Water supply Benefits

Avoided Costs of Service Disruption (Quantifiable). In earthquake scenarios I, II, and III, there would be no loss of potable water and wastewater service following the event with the proposed project. In earthquake scenarios IV and V there is a small anticipated loss of service under the proposed project as the District would halt service for a couple of hours to conduct

follow-up pipe inspection and cleaning. As a result, the loss of service for these events was estimated at one day each. The project sponsor estimates, using FEMA Benefit-Cost Analysis to derive annualized without-project damages, that the annual costs without the project would be $101,907 and the costs with the project would be $2,182, for a total annual benefit of $99,725.

There is widespread agreement in the literature that the analysis of benefits should include the benefits to society as a whole, not just those to the utility (e.g., avoided repair costs). These benefits can include avoided business interruption loss to companies who would be forced to shut down or losses as businesses curtail their activities because of disruption of service (Grossi and Kunreuther 2005). To some extent, these benefits can be overstated, however, as case studies show, businesses often wholly recover from these losses in increased productivity after service resumes. As a result, the losses to businesses may amount to only the increased payments in overtime for workers and the management costs to respond to the emergency.

The beneficiaries of this benefit would include the domestic water users in and visitors to the City of Blue Lake and the Fieldbrook Glendale Community Services District.

Avoided Costs Associated with Emergency Repairs (Quantifiable). In all five earthquake scenarios, the costs to repair the pipeline following an earthquake event would diminish to $0 with the proposed project. The project sponsor estimates, using FEMA Benefit-Cost Analysis to derive annualized without-project damages, that the annual costs without the project would be $6,664 and the costs with the project would be $0, for a total annual avoided cost of $6,664.

The beneficiaries of this benefit would include the Humboldt Bay Municipal Water District and its consumers, who would incur the future costs of repairing the pipeline in the event of an earthquake event. Other potential beneficiaries include taxpayers at the state and federal level, who incur costs through disaster relief agencies such as FEMA, and other emergency-service entities such as the Red Cross.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

E. Eel River WMA

405–Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project, Redwood Forest Foundation, Inc.

1. Project Description and Background

The Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project would create biochar with biomass collected from 37 acres of dense forestland over a two-year period. Without the project, 37 fewer acres of dense forestland would be thinned, increasing the likelihood of a catastrophic fire event along with other negative impacts to the watershed that accompany fire events, such as increased sedimentation, biodiversity loss, and increased susceptibility to invasion by exotic species. With the project, 37 additional acres of dense forestland would be thinned, reducing the likelihood of a catastrophic fire event, improving aquatic and riparian habitat, and

increasing carbon sequestration and soil health through the production and use of biochar. The project would also create access to an acorn harvesting orchard for use by Native American communities who derive cultural value from access to acorn orchards.

2. Project Costs

The present value of the project's costs, which would occur between 2009 and 2013, is $577,595 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, planning, equipment, and materials necessary to implement the project. The project would also use 312 hours of staff labor, which, with salary information provided by the project sponsor, would have a total value of $18,000, in 2009 dollars, spread evenly over 2011 and 2012. The project would not require any ongoing administrative, operations, maintenance, replacement, or other costs. Table 11-405 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water supply-Related Benefits

This project would generate annual water supply benefits, as described below. Table 12-405 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Annual Water supply Benefits

Increased Instream Flows for Environmental Purposes (Quantifiable). The project would thin 18.5 acres of forestland per year for two years. Research suggests that forest-thinning activities on similar forestland increased instream flow by 0.15 acre-feet per acre per year for seven years beginning the year after the thinning (Keppeler 1998). After the first year of thinning, the project would increase instream flow by 2.85 acre-feet. For the following six years, instream flow would be 5.7 acre-feet more per year than the baseline. Eight years after the first thinning, instream flow would be 2.85 acre-feet more than the baseline before returning to the baseline instream flow nine years after the first thinning. Increased instream flow has many potential benefits including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply.

The literature suggests that forest thinning like that provided by this project increases minimum discharge for several years after thinning (Keppeler 1998). Data are insufficient to estimate the total increase in minimum discharge yielded by the project. What this suggests, however, is that some of the increased instream flow previously described likely would enter the watershed during periods of low flow, which is when sufficient instream flow is often lacking.

Increased instream flow has many potential benefits, including enhanced aquatic habitat, improved recreational benefits, and increased municipal, industrial, and agricultural water supply. Data are insufficient to identify the ultimate use of the increased instream flow resulting from the project. The literature suggests that agricultural water use has a value of $53 per acre-foot, municipal water use has a value of $112 per acre-foot, and water left instream for environmental purposes, including salmon habitat, has a value of $75 per acre-foot (Brown

2007).[10] Without additional information, we assume the increased instream flow would not be diverted from the waterway and would thus be valuable insofar as it improves aquatic habitat for salmon. The value we use for the benefits of increased instream flow for salmonid habitat likely underestimates the value derived from this project because some of the increased instream flow would enter the waterway during periods of low flow, making that water particularly valuable.

The beneficiaries of this benefit would include several groups of stakeholders including commercial fishermen and recreational anglers in both marine and freshwater fisheries, and the general public insofar as they value an increase in fish populations regardless of any potential future direct use or exposure to the impacted fish populations. It would also benefit other recreational users of water, such as kayakers and wildlife watchers, as well as Californians who place a non-use value on maintaining sufficient instream flows for environmental purposes.

Please see Attachment 8 for the water-quality and other benefits this project would generate.

F. Trinity River WMA

357–Highway 96 Stormceptor, Willow Creek Community Services District

1. Project Description and Background

The Highway 96 Stormceptor project would install new stormwater infrastructure, including an interceptor pipe to divert storm drainage from Highway 96 and the Willow Creek commercial business district, and a detention pond for contaminant settling prior to eventual discharge into Willow Creek. Without the project, the Willow Creek Community Services District's domestic water intake would be at risk from premature failure from sediment and other contaminants carried with stormwater flows, which are deposited directly upstream from the existing domestic water intake in Willow Creek. It would also be at risk from major contamination and system shutdown in the event of an emergency spill or accident that discharges toxic pollutants into Willow Creek. Either premature failure or emergency discharge could result in the temporary shutdown of the water system and service disruption to customers. The commercial business district of Willow Creek would be more vulnerable to property damage as a result of a flood event. With the project, the new stormwater infrastructure would protect the District's domestic water treatment system from emergency discharges, and would allow the filtration equipment to function for its expected lifespan. The new stormwater system would also lower the probability of flooding, and the cost of flood damage within the Willow Creek commercial business district.

[10] See regional-level benefits section for a description of the methodology and source used to derive this estimate.

2. Project Costs

The present value of the project's costs, which would occur between 2011 and 2049, is $228,199 in 2009 dollars, discounted at a 6-percent annual rate. These costs would fund labor, equipment, and materials necessary to implement the project. The project would require annual administrative, operations, maintenance costs for each year of the project's expected life. Table 11-357 lists the estimated value of the costs, by category, in the years they would occur, and calculates their total present value.

3. Total Water supply-Related Benefits

This project would generate other water supply benefits, as described below. Table 14-357 presents the value of the benefits, by category, in the years they would occur, and calculates their total present value.

a. Other Annual Water Supply Benefits

Avoided Costs of Service Disruption (Unquantifiable). The project would reduce the amount of contaminants and sediment entering the filtration system, which would protect water treatment equipment from premature or unexpected failure. It would also protect the system from toxic discharges from emergencies occurring on Highway 96. This would reduce the risk of service disruption for the District's customers. The District estimates that a temporary shutdown of its water system would cost $1,296 per day in lost revenue. The District would also incur costs stemming from additional administrative and operations efforts associated with repairing the failure and addressing issues arising from service disruption. Customers would incur costs by not having access to water in their homes and businesses and by not having water available for medical or fire-fighting needs. Data are unavailable to estimate the potential duration of a temporary system shutdown, or the full costs of a service disruption to the District and its customers.

The beneficiaries of this benefit would include the Willow Creek Community Service District ratepayers, and permanent and transitory customers (e.g., visitors to the community who would not have access to water or services dependent on water).

Please see Attachment 8 for the water-quality and other benefits this project would generate.

Please see Attachment 9 for the flood-damage-reduction benefits this project would generate.

V. References

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VI. Project-Level Costs (Table 11)

Tables 11-402 through 11-357 present the project-level costs, as described above in Section IV.

Table 11 - Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 402--Ackerman Creek Habitat Restoration, Pomo Nation

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$100,000						$100,000	0.943	$94,300
2011	$106,800	$11,000	$3,000	$20,000	$1,500		$142,300	0.890	$126,647
2012	$4,700	$1,000	$3,000	$3,900	$1,000		$13,600	0.840	$11,424
2013	$5,000	$1,000	$3,000	$3,900	$500		$13,400	0.792	$10,613
2014	$4,750	$1,000	$3,000	$3,900	$500		$13,150	0.747	$9,823
2015	$5,700	$1,000	$3,000	$3,900	$500		$14,100	0.705	$9,941
2016							$0	0.665	$0
2017							$0	0.627	$0
2018							$0	0.592	$0
2019							$0	0.558	$0
2020							$0	0.527	$0
2021							$0	0.497	$0
2022							$0	0.469	$0
2023							$0	0.442	$0
2024							$0	0.417	$0
2025							$0	0.394	$0
2026							$0	0.371	$0
2027							$0	0.350	$0
2028							$0	0.331	$0
2029							$0	0.312	$0
2030							$0	0.294	$0
2031							$0	0.278	$0
2032							$0	0.262	$0
2033							$0	0.247	$0
2034							$0	0.233	$0
2035							$0	0.220	$0
2036							$0	0.207	$0
2037							$0	0.196	$0
2038							$0	0.185	$0
2039							$0	0.174	$0
2040							$0	0.164	$0
2041							$0	0.155	$0
2042							$0	0.146	$0
2043							$0	0.138	$0
2044							$0	0.130	$0
2045							$0	0.123	$0
2046							$0	0.116	$0
2047							$0	0.109	$0
2048							$0	0.103	$0
2049							$0	0.097	$0
2050							$0	0.092	$0
2051							$0	0.087	$0
2052							$0	0.082	$0
2053							$0	0.077	$0
2054							$0	0.073	$0
2055							$0	0.069	$0
2056							$0	0.065	$0
2057							$0	0.061	$0
2058							$0	0.058	$0
2059							$0	0.054	$0
2060							$0	0.051	$0
2061							$0	0.048	$0
2062							$0	0.046	$0
2063							$0	0.043	$0
2064							$0	0.041	$0
Project Life	$226,950	$15,000	$15,000	$35,600	$4,000	$0	$296,550	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$262,747
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 345--Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$0						$0	0.943	$0
2011	$395,205			$10,000			$405,205	0.890	$360,632
2012	$420,000			$10,000			$430,000	0.840	$361,200
2013	$140,000			$35,200			$175,200	0.792	$138,758
2014	$0			$25,200			$25,200	0.747	$18,824
2015	$0			$25,200			$25,200	0.705	$17,766
2016	$0			$25,200			$25,200	0.665	$16,758
2017	$0			$25,200			$25,200	0.627	$15,800
2018	$0			$25,200			$25,200	0.592	$14,918
2019	$0			$25,200			$25,200	0.558	$14,062
2020	$0			$25,200			$25,200	0.527	$13,280
2021	$0			$25,200			$25,200	0.497	$12,524
2022	$0			$25,200			$25,200	0.469	$11,819
2023	$0			$25,200			$25,200	0.442	$11,138
2024	$0			$25,200			$25,200	0.417	$10,508
2025	$0			$25,200			$25,200	0.394	$9,929
2026	$0			$25,200			$25,200	0.371	$9,349
2027	$0			$25,200			$25,200	0.350	$8,820
2028	$0						$0	0.331	$0
2029	$0						$0	0.312	$0
2030	$0						$0	0.294	$0
2031	$0						$0	0.278	$0
2032	$0						$0	0.262	$0
2033	$0						$0	0.247	$0
2034	$0						$0	0.233	$0
2035	$0						$0	0.220	$0
2036	$0						$0	0.207	$0
2037	$0						$0	0.196	$0
2038	$0						$0	0.185	$0
2039	$0						$0	0.174	$0
2040	$0						$0	0.164	$0
2041	$0						$0	0.155	$0
2042	$0						$0	0.146	$0
2043	$0						$0	0.138	$0
2044	$0						$0	0.130	$0
2045	$0						$0	0.123	$0
2046	$0						$0	0.116	$0
2047	$0						$0	0.109	$0
2048	$0						$0	0.103	$0
2049	$0						$0	0.097	$0
2050	$0						$0	0.092	$0
2051	$0						$0	0.087	$0
2052	$0						$0	0.082	$0
2053	$0						$0	0.077	$0
2054	$0						$0	0.073	$0
2055	$0						$0	0.069	$0
2056	$0						$0	0.065	$0
2057	$0						$0	0.061	$0
2058	$0						$0	0.058	$0
2059							$0	0.054	$0
2060							$0	0.051	$0
2061							$0	0.048	$0
2062							$0	0.046	$0
2063							$0	0.043	$0
2064							$0	0.041	$0
Project Life	$955,205	$0	$0	$408,000	$0	$0	$1,363,205		
								Total Present Value of Discounted Costs (Sum of Column (i))	$1,046,088
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 292--Lower Russian River Water Quality Improvement Project, Sotoyome Resource Conservation District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010							$0	0.943	$0
2011	$150,000						$150,000	0.890	$133,500
2012	$266,500						$266,500	0.840	$223,860
2013	$0						$0	0.792	$0
2014	$0						$0	0.747	$0
2015	$0						$0	0.705	$0
2016	$0						$0	0.665	$0
2017	$0						$0	0.627	$0
2018	$0						$0	0.592	$0
2019	$0						$0	0.558	$0
2020	$0						$0	0.527	$0
2021	$0						$0	0.497	$0
2022	$0						$0	0.469	$0
2023	$0						$0	0.442	$0
2024	$0						$0	0.417	$0
2025	$0						$0	0.394	$0
2026	$0						$0	0.371	$0
2027	$0						$0	0.350	$0
2028	$0						$0	0.331	$0
2029	$0						$0	0.312	$0
2030	$0						$0	0.294	$0
2031	$0						$0	0.278	$0
2032	$0						$0	0.262	$0
2033	$0						$0	0.247	$0
2034	$0						$0	0.233	$0
2035	$0						$0	0.220	$0
2036	$0						$0	0.207	$0
2037	$0						$0	0.196	$0
2038	$0						$0	0.185	$0
2039	$0						$0	0.174	$0
2040	$0						$0	0.164	$0
2041	$0						$0	0.155	$0
2042	$0						$0	0.146	$0
2043	$0						$0	0.138	$0
2044	$0						$0	0.130	$0
2045	$0						$0	0.123	$0
2046	$0						$0	0.116	$0
2047	$0						$0	0.109	$0
2048	$0						$0	0.103	$0
2049	$0						$0	0.097	$0
2050	$0						$0	0.092	$0
2051	$0						$0	0.087	$0
2052	$0						$0	0.082	$0
2053	$0						$0	0.077	$0
2054	$0						$0	0.073	$0
2055	$0						$0	0.069	$0
2056	$0						$0	0.065	$0
2057	$0						$0	0.061	$0
2058	$0						$0	0.058	$0
2059	$0						$0	0.054	$0
2060	$0						$0	0.051	$0
2061	$0						$0	0.048	$0
2062	$0						$0	0.046	$0
2063	$0						$0	0.043	$0
2064	$0						$0	0.041	$0
Project Life	$416,500						$416,500	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$357,360
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project Title: 364--Mendocino Jumpstart Integrated Water Management Plan, Mendocino County Water Agency

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$0						$0	1.000	$0
2010	$0						$0	0.943	$0
2011	$321,937	$10,000					$331,937	0.890	$295,424
2012	$17,960	$4,000					$21,960	0.840	$18,446
2013	$111,153	$6,000					$117,153	0.792	$92,785
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$451,050	$20,000					$471,050	...	
							Total Present Value of Discounted Costs (Sum of Column (i))		$406,656
							Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries		

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Proposal Title: 374-6--Nissa--kah Creek Fish Passage Removal, Hopland Band of Pomo Indians

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$111,005						$111,005	1.000	$111,005
2010							$0	0.943	$0
2011	$150,000					$640	$150,640	0.890	$134,070
2012	$500,000					$640	$500,640	0.840	$420,538
2013	$355,237					$640	$355,877	0.792	$281,855
2014						$640	$640	0.747	$478
2015						$640	$640	0.705	$451
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$1,116,242	$0	$0	$0	$0	$3,200	$1,119,442	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$948,396
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs. Volunteer labor is included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project: 393--Russian River Arundo donax Removal and Riparian Enhancement Program, Sotoyome Resource Conservation District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$0						$0	1.000	$0
2010	$0						$0	0.943	$0
2011	$170,000						$170,000	0.890	$151,300
2012	$100,000						$100,000	0.840	$84,000
2013	$25,000						$25,000	0.792	$19,800
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$295,000	$0	$0	$0	$0	$0	$295,000	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$255,100
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project: 396--Copeland Creek Watershed Detention/Recharge, Habitat Restoration, and Steelhead Refugia Project, Sonoma County Water Agency

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$250,000						$250,000	1.000	$250,000
2010	$312,500						$312,500	0.943	$294,688
2011	$312,500					$4,300	$316,800	0.890	$281,952
2012	$125,000						$125,000	0.840	$105,000
2013	$125,000						$125,000	0.792	$99,000
2014	$125,000						$125,000	0.747	$93,375
2015		$3,200		$80,000			$83,200	0.705	$58,656
2016		$3,200		$80,000			$83,200	0.665	$55,328
2017		$3,200		$80,000			$83,200	0.627	$52,166
2018		$3,200		$80,000			$83,200	0.592	$49,254
2019		$3,200		$80,000			$83,200	0.558	$46,426
2020		$3,200		$80,000			$83,200	0.527	$43,846
2021		$3,200		$80,000			$83,200	0.497	$41,350
2022		$3,200		$80,000			$83,200	0.469	$39,021
2023		$3,200		$80,000			$83,200	0.442	$36,774
2024		$3,200		$80,000			$83,200	0.417	$34,694
2025		$3,200		$80,000			$83,200	0.394	$32,781
2026		$3,200		$80,000			$83,200	0.371	$30,867
2027		$3,200		$80,000			$83,200	0.350	$29,120
2028		$3,200		$80,000			$83,200	0.331	$27,539
2029		$3,200		$80,000			$83,200	0.312	$25,958
2030		$3,200		$80,000			$83,200	0.294	$24,461
2031		$3,200		$80,000			$83,200	0.278	$23,130
2032		$3,200		$80,000			$83,200	0.262	$21,798
2033		$3,200		$80,000			$83,200	0.247	$20,550
2034		$3,200		$80,000			$83,200	0.233	$19,386
2035		$3,200		$80,000			$83,200	0.220	$18,304
2036		$3,200		$80,000			$83,200	0.207	$17,222
2037		$3,200		$80,000			$83,200	0.196	$16,307
2038		$3,200		$80,000			$83,200	0.185	$15,392
2039		$3,200		$80,000			$83,200	0.174	$14,477
2040		$3,200		$80,000			$83,200	0.164	$13,645
2041		$3,200		$80,000			$83,200	0.155	$12,896
2042		$3,200		$80,000			$83,200	0.146	$12,147
2043		$3,200		$80,000			$83,200	0.138	$11,482
2044		$3,200		$80,000			$83,200	0.130	$10,816
2045		$3,200		$80,000			$83,200	0.123	$10,234
2046		$3,200		$80,000			$83,200	0.116	$9,651
2047		$3,200		$80,000			$83,200	0.109	$9,069
2048		$3,200		$80,000			$83,200	0.103	$8,570
2049		$3,200		$80,000			$83,200	0.097	$8,070
2050		$3,200		$80,000			$83,200	0.092	$7,654
2051		$3,200		$80,000			$83,200	0.087	$7,238
2052		$3,200		$80,000			$83,200	0.082	$6,822
2053		$3,200		$80,000			$83,200	0.077	$6,406
2054		$3,200		$80,000			$83,200	0.073	$6,074
2055		$3,200		$80,000			$83,200	0.069	$5,741
2056		$3,200		$80,000			$83,200	0.065	$5,408
2057		$3,200		$80,000			$83,200	0.061	$5,075
2058		$3,200		$80,000			$83,200	0.058	$4,826
2059		$3,200		$80,000			$83,200	0.054	$4,493
2060		$3,200		$80,000			$83,200	0.051	$4,243
2061		$3,200		$80,000			$83,200	0.048	$3,994
2062		$3,200		$80,000			$83,200	0.046	$3,827
2063		$3,200		$80,000			$83,200	0.043	$3,578
2064		$3,200		$80,000			$83,200	0.041	$3,411
Project Life	$1,250,000	$160,000	$0	$4,000,000	$0	$4,300	$5,414,300		
							Total Present Value of Discounted Costs (Sum of Column (i))		$2,104,194
							Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries		

Comments: See narrative description in Attachment 7 for a description of these costs. Volunteer labor is included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project: 289--Camp Creek Habitat Protection-Road Decommissioning Implementation Project, Karuk Tribe

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$0						$0	1.000	$0
2010	$0						$0	0.943	$0
2011	$225,000						$225,000	0.890	$200,250
2012	$150,000						$150,000	0.840	$126,000
2013	$0						$0	0.792	$0
2014	$0						$0	0.747	$0
2015	$0						$0	0.705	$0
2016	$0						$0	0.665	$0
2017	$0						$0	0.627	$0
2018	$0						$0	0.592	$0
2019	$0						$0	0.558	$0
2020	$0						$0	0.527	$0
2021	$0						$0	0.497	$0
2022	$0						$0	0.469	$0
2023	$0						$0	0.442	$0
2024	$0						$0	0.417	$0
2025	$0						$0	0.394	$0
2026	$0						$0	0.371	$0
2027	$0						$0	0.350	$0
2028	$0						$0	0.331	$0
2029	$0						$0	0.312	$0
2030	$0						$0	0.294	$0
2031	$0						$0	0.278	$0
2032	$0						$0	0.262	$0
2033	$0						$0	0.247	$0
2034	$0						$0	0.233	$0
2035	$0						$0	0.220	$0
2036	$0						$0	0.207	$0
2037	$0						$0	0.196	$0
2038	$0						$0	0.185	$0
2039	$0						$0	0.174	$0
2040	$0						$0	0.164	$0
2041	$0						$0	0.155	$0
2042	$0						$0	0.146	$0
2043	$0						$0	0.138	$0
2044	$0						$0	0.130	$0
2045	$0						$0	0.123	$0
2046	$0						$0	0.116	$0
2047	$0						$0	0.109	$0
2048	$0						$0	0.103	$0
2049	$0						$0	0.097	$0
2050	$0						$0	0.092	$0
2051	$0						$0	0.087	$0
2052	$0						$0	0.082	$0
2053	$0						$0	0.077	$0
2054	$0						$0	0.073	$0
2055	$0						$0	0.069	$0
2056	$0						$0	0.065	$0
2057	$0						$0	0.061	$0
2058	$0						$0	0.058	$0
2059	$0						$0	0.054	$0
2060	$0						$0	0.051	$0
2061	$0						$0	0.048	$0
2062	$0						$0	0.046	$0
2063	$0						$0	0.043	$0
2064	$375,000	$0	$0	$0	$0	$0	$375,000	0.041	$15,375
							Total Present Value of Discounted Costs (Sum of Column (i))		$341,625
							Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries		
Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 311--Indian Creek Sewer Pipeline Crossing, Happy Camp Sanitary District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010							$0	0.943	$0
2011	$130,651						$130,651	0.890	$116,279
2012	$766,349						$766,349	0.840	$643,733
2013	$0		$14,000				$14,000	0.792	$11,088
2014	$0		$14,000				$14,000	0.747	$10,458
2015	$0		$14,000				$14,000	0.705	$9,870
2016	$0		$14,000				$14,000	0.665	$9,310
2017	$0		$14,000				$14,000	0.627	$8,778
2018	$0		$14,000				$14,000	0.592	$8,288
2019	$0		$14,000				$14,000	0.558	$7,812
2020	$0		$14,000				$14,000	0.527	$7,378
2021	$0		$14,000				$14,000	0.497	$6,958
2022	$0		$14,000				$14,000	0.469	$6,566
2023	$0		$14,000				$14,000	0.442	$6,188
2024	$0		$14,000				$14,000	0.417	$5,838
2025	$0		$14,000				$14,000	0.394	$5,516
2026	$0		$14,000				$14,000	0.371	$5,194
2027	$0		$14,000				$14,000	0.350	$4,900
2028	$0		$14,000				$14,000	0.331	$4,634
2029	$0		$14,000				$14,000	0.312	$4,368
2030	$0		$14,000				$14,000	0.294	$4,116
2031	$0		$14,000				$14,000	0.278	$3,892
2032	$0						$0	0.262	$0
2033	$0						$0	0.247	$0
2034	$0						$0	0.233	$0
2035	$0						$0	0.220	$0
2036	$0						$0	0.207	$0
2037	$0						$0	0.196	$0
2038	$0						$0	0.185	$0
2039	$0						$0	0.174	$0
2040	$0						$0	0.164	$0
2041	$0						$0	0.155	$0
2042	$0						$0	0.146	$0
2043	$0						$0	0.138	$0
2044	$0						$0	0.130	$0
2045	$0						$0	0.123	$0
2046	$0						$0	0.116	$0
2047	$0						$0	0.109	$0
2048	$0						$0	0.103	$0
2049	$0						$0	0.097	$0
2050	$0						$0	0.092	$0
2051	$0						$0	0.087	$0
2052	$0						$0	0.082	$0
2053	$0						$0	0.077	$0
2054	$0						$0	0.073	$0
2055	$0						$0	0.069	$0
2056	$0						$0	0.065	$0
2057	$0						$0	0.061	$0
2058	$0						$0	0.058	$0
2059	$0						$0	0.054	$0
2060	$0						$0	0.051	$0
2061	$0						$0	0.048	$0
2062	$0						$0	0.046	$0
2063	$0						$0	0.043	$0
2064	$0						$0	0.041	$0
Project Life	$897,000	$0	$266,000	$0	$0	$0	$1,163,000	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$891,165
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 306--Water Treatment System Upgrade, Happy Camp Community Services District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$21,000						$21,000	0.943	$19,803
2011	$59,215						$59,215	0.890	$52,701
2012	$423,785						$423,785	0.840	$355,979
2013	$0		$15,000				$15,000	0.792	$11,880
2014	$0		$15,000				$15,000	0.747	$11,205
2015	$0		$15,000				$15,000	0.705	$10,575
2016	$0		$15,000				$15,000	0.665	$9,975
2017	$0		$15,000				$15,000	0.627	$9,405
2018	$0		$15,000				$15,000	0.592	$8,880
2019	$0		$15,000				$15,000	0.558	$8,370
2020	$0		$15,000				$15,000	0.527	$7,905
2021	$0		$15,000				$15,000	0.497	$7,455
2022	$0		$15,000				$15,000	0.469	$7,035
2023	$0		$15,000				$15,000	0.442	$6,630
2024	$0		$15,000				$15,000	0.417	$6,255
2025	$0		$15,000				$15,000	0.394	$5,910
2026	$0		$15,000				$15,000	0.371	$5,565
2027	$0		$15,000				$15,000	0.350	$5,250
2028	$0		$15,000				$15,000	0.331	$4,965
2029	$0		$15,000				$15,000	0.312	$4,680
2030	$0		$15,000				$15,000	0.294	$4,410
2031	$0		$15,000				$15,000	0.278	$4,170
2032	$0						$0	0.262	$0
2033	$0						$0	0.247	$0
2034	$0						$0	0.233	$0
2035	$0						$0	0.220	$0
2036	$0						$0	0.207	$0
2037	$0						$0	0.196	$0
2038	$0						$0	0.185	$0
2039	$0						$0	0.174	$0
2040	$0						$0	0.164	$0
2041	$0						$0	0.155	$0
2042	$0						$0	0.146	$0
2043	$0						$0	0.138	$0
2044	$0						$0	0.130	$0
2045	$0						$0	0.123	$0
2046	$0						$0	0.116	$0
2047	$0						$0	0.109	$0
2048	$0						$0	0.103	$0
2049	$0						$0	0.097	$0
2050	$0						$0	0.092	$0
2051	$0						$0	0.087	$0
2052	$0						$0	0.082	$0
2053	$0						$0	0.077	$0
2054	$0						$0	0.073	$0
2055	$0						$0	0.069	$0
2056	$0						$0	0.065	$0
2057	$0						$0	0.061	$0
2058	$0						$0	0.058	$0
2059	$0						$0	0.054	$0
2060	$0						$0	0.051	$0
2061	$0						$0	0.048	$0
2062	$0						$0	0.046	$0
2063	$0						$0	0.043	$0
2064	$0						$0	0.041	$0
Project Life	$504,000	$0	$285,000	$0	$0	$0	$789,000	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$569,004
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 408--Del Norte Agricultural Enhancement Program, Del Norte Resource Conservation District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010							$0	0.943	$0
2011	$240,000					$15,700	$255,700	0.890	$227,573
2012	$250,000					$20,200	$270,200	0.840	$226,968
2013								0.792	
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$490,000	$0	$0	$0	$0	$35,900	$525,900	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$454,541
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs. Volunteer labor is included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 355–Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$0						$0	1.000	$0
2010	$0						$0	0.943	$0
2011	$14,860	$600	$300	$780		$240	$16,780	0.890	$14,934
2012	$0		$300	$780		$240	$1,320	0.840	$1,109
2013	$0		$300	$780		$240	$1,320	0.792	$1,045
2014	$0		$300	$780		$240	$1,320	0.747	$986
2015	$0		$300	$780		$240	$1,320	0.705	$931
Project Life	$14,860	$600	$1,500	$3,900	$0	$1,200	$22,060	…	
								Total Present Value of Discounted Costs (Sum of Column (i))	$19,005
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: See narrative description in Attachment 7 for a description of these costs. Opportunity cost associated with pastureland is included in the 'Other Costs' column.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project: 352--Gualala River Sediment Reduction Program, Gualala River Watershed Council

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$72,480						$72,480	1.000	$72,480
2010	$85,800						$85,800	0.943	$80,909
2011	$450,000						$450,000	0.890	$400,500
2012	$300,000	$100		$200			$300,300	0.840	$252,252
2013		$100		$200			$300	0.792	$238
2014		$100		$200			$300	0.747	$224
2015		$100		$200			$300	0.705	$212
2016		$100		$200			$300	0.665	$200
2017								0.627	$0
2018								0.592	$0
2019								0.558	$0
2020								0.527	$0
2021								0.497	$0
2022								0.469	$0
2023								0.442	$0
2024								0.417	$0
2025								0.394	$0
2026								0.371	$0
2027								0.350	$0
2028								0.331	$0
2029								0.312	$0
2030								0.294	$0
2031								0.278	$0
2032								0.262	$0
2033								0.247	$0
2034								0.233	$0
2035								0.220	$0
2036								0.207	$0
2037								0.196	$0
2038								0.185	$0
2039								0.174	$0
2040								0.164	$0
2041								0.155	$0
2042								0.146	$0
2043								0.138	$0
2044								0.130	$0
2045								0.123	$0
2046								0.116	$0
2047								0.109	$0
2048								0.103	$0
2049								0.097	$0
2050								0.092	$0
2051								0.087	$0
2052								0.082	$0
2053								0.077	$0
2054								0.073	$0
2055								0.069	$0
2056								0.065	$0
2057								0.061	$0
2058								0.058	$0
2059								0.054	$0
2060								0.051	$0
2061								0.048	$0
2062								0.046	$0
2063								0.043	$0
2064								0.041	$0
Project Life	$908,280	$500	$0	$1,000	$0	$0	$909,780	...	
							Total Present Value of Discounted Costs (Sum of Column (i))		$807,014
							Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries		

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project: 444--S. Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010							$0	0.943	$0
2011		$3,572	$70,679	$1,000		$1,792	$77,043	0.890	$68,568
2012		$7,143	$139,357	$3,000		$5,555	$155,055	0.840	$130,246
2013		$3,571	$68,678	$3,000		$5,555	$80,804	0.792	$63,997
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life								...	
							Total Present Value of Discounted Costs (Sum of Column (i))		$262,811
							Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries		

Comments: See narrative description in Attachment 7 for a description of these costs. Volunteer labor is included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project Title: 358--Mendocino Headwaters Integrated Water Management Plan, Mendocino County RCD

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$15,447						$15,447	0.943	$14,567
2011	$332,507						$332,507	0.890	$295,931
2012	$335,953			$2,000	$2,000		$339,953	0.840	$285,561
2013				$6,720	$2,000	$2,000	$10,720	0.792	$8,490
2014				$3,720	$1,000	$2,000	$6,720	0.747	$5,020
2015				$4,720	$1,000	$2,000	$7,720	0.705	$5,443
2016				$3,720	$1,000	$2,000	$6,720	0.665	$4,469
2017				$1,220		$1,000	$2,220	0.627	$1,392
2018				$500		$1,000	$1,500	0.592	$888
2019				$500		$1,000	$1,500	0.558	$837
2020				$500		$1,000	$1,500	0.527	$791
2021				$500		$1,000	$1,500	0.497	$746
2022						$1,000	$1,000	0.469	$469
2023				$500		$1,000	$1,500	0.442	$663
2024						$1,000	$1,000	0.417	$417
2025				$500		$1,000	$1,500	0.394	$591
2026						$1,000	$1,000	0.371	$371
2027				$500		$1,000	$1,500	0.350	$525
2028						$1,000	$1,000	0.331	$331
2029				$500		$1,000	$1,500	0.312	$468
2030						$1,000	$1,000	0.294	$294
2031				$500		$1,000	$1,500	0.278	$417
2032						$1,000	$1,000	0.262	$262
2033							$0	0.247	$0
2034							$0	0.233	$0
2035							$0	0.220	$0
2036							$0	0.207	$0
2037							$0	0.196	$0
2038							$0	0.185	$0
2039							$0	0.174	$0
2040							$0	0.164	$0
2041							$0	0.155	$0
2042							$0	0.146	$0
2043							$0	0.138	$0
2044							$0	0.130	$0
2045							$0	0.123	$0
2046							$0	0.116	$0
2047							$0	0.109	$0
2048							$0	0.103	$0
2049							$0	0.097	$0
2050							$0	0.092	$0
2051							$0	0.087	$0
2052							$0	0.082	$0
2053							$0	0.077	$0
2054							$0	0.073	$0
2055							$0	0.069	$0
2056							$0	0.065	$0
2057							$0	0.061	$0
2058							$0	0.058	$0
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$683,907	$0	$0	$26,600	$7,000	$24,000	$741,507	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$628,941
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs. Monitoring costs are included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 441--Waterfall Gulch Transmission Main, City of Fort Bragg

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$51,500						$51,500	0.943	$48,565
2011	$736,805	$5,000					$741,805	0.890	$660,206
2012							$0	0.840	$0
2013								0.792	
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$788,305	$5,000	$0	$0	$0	$0	$793,305		
								Total Present Value of Discounted Costs (Sum of Column (i))	$708,771
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project

(All costs should be in 2009 Dollars)

Project Title: 362--Blue Lake Fieldbrook Pipeline Support Retrofit, Humboldt Bay Municipal Water District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010	$1,603,580	$1,000	$1,000	$5,000			$1,610,580	0.943	$1,518,777
2011		$1,000	$1,000	$5,000			$7,000	0.890	$6,230
2012		$1,000	$1,000	$5,000			$7,000	0.840	$5,880
2013		$1,000	$1,000	$5,000			$7,000	0.792	$5,544
2014		$1,000	$1,000	$5,000			$7,000	0.747	$5,229
2015		$1,000	$1,000	$5,000			$7,000	0.705	$4,935
2016		$1,000	$1,000	$5,000			$7,000	0.665	$4,655
2017		$1,000	$1,000	$5,000			$7,000	0.627	$4,389
2018		$1,000	$1,000	$5,000			$7,000	0.592	$4,144
2019		$1,000	$1,000	$5,000			$7,000	0.558	$3,906
2020		$1,000	$1,000	$5,000			$7,000	0.527	$3,689
2021		$1,000	$1,000	$5,000			$7,000	0.497	$3,479
2022		$1,000	$1,000	$5,000			$7,000	0.469	$3,283
2023		$1,000	$1,000	$5,000			$7,000	0.442	$3,094
2024		$1,000	$1,000	$5,000			$7,000	0.417	$2,919
2025		$1,000	$1,000	$5,000			$7,000	0.394	$2,758
2026		$1,000	$1,000	$5,000			$7,000	0.371	$2,597
2027		$1,000	$1,000	$5,000			$7,000	0.350	$2,450
2028		$1,000	$1,000	$5,000			$7,000	0.331	$2,317
2029		$1,000	$1,000	$5,000			$7,000	0.312	$2,184
2030		$1,000	$1,000	$5,000			$7,000	0.294	$2,058
2031		$1,000	$1,000	$5,000			$7,000	0.278	$1,946
2032		$1,000	$1,000	$5,000			$7,000	0.262	$1,834
2033		$1,000	$1,000	$5,000			$7,000	0.247	$1,729
2034		$1,000	$1,000	$5,000			$7,000	0.233	$1,631
2035		$1,000	$1,000	$5,000			$7,000	0.220	$1,540
2036		$1,000	$1,000	$5,000			$7,000	0.207	$1,449
2037		$1,000	$1,000	$5,000			$7,000	0.196	$1,372
2038		$1,000	$1,000	$5,000			$7,000	0.185	$1,295
2039		$1,000	$1,000	$5,000			$7,000	0.174	$1,218
2040		$1,000	$1,000	$5,000			$7,000	0.164	$1,148
2041		$1,000	$1,000	$5,000			$7,000	0.155	$1,085
2042		$1,000	$1,000	$5,000			$7,000	0.146	$1,022
2043		$1,000	$1,000	$5,000			$7,000	0.138	$966
2044		$1,000	$1,000	$5,000			$7,000	0.130	$910
2045		$1,000	$1,000	$5,000			$7,000	0.123	$861
2046		$1,000	$1,000	$5,000			$7,000	0.116	$812
2047		$1,000	$1,000	$5,000			$7,000	0.109	$763
2048		$1,000	$1,000	$5,000			$7,000	0.103	$721
2049		$1,000	$1,000	$5,000			$7,000	0.097	$679
2050		$1,000	$1,000	$5,000			$7,000	0.092	$644
2051		$1,000	$1,000	$5,000			$7,000	0.087	$609
2052		$1,000	$1,000	$5,000			$7,000	0.082	$574
2053		$1,000	$1,000	$5,000			$7,000	0.077	$539
2054		$1,000	$1,000	$5,000			$7,000	0.073	$511
2055		$1,000	$1,000	$5,000			$7,000	0.069	$483
2056		$1,000	$1,000	$5,000			$7,000	0.065	$455
2057		$1,000	$1,000	$5,000			$7,000	0.061	$427
2058		$1,000	$1,000	$5,000			$7,000	0.058	$406
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life								...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$1,622,146
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Project: 405--Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project, Redwood Forest Foundation, Inc

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009	$12,000						$12,000	1.000	$12,000
2010	$16,000						$16,000	0.943	$15,088
2011	$244,680					$6,000	$250,680	0.890	$223,105
2012	$27,680					$6,000	$33,680	0.840	$28,291
2013	$27,680					$6,000	$33,680	0.792	$26,675
2014								0.747	
2015								0.705	
2016								0.665	
2017								0.627	
2018								0.592	
2019								0.558	
2020								0.527	
2021								0.497	
2022								0.469	
2023								0.442	
2024								0.417	
2025								0.394	
2026								0.371	
2027								0.350	
2028								0.331	
2029								0.312	
2030								0.294	
2031								0.278	
2032								0.262	
2033								0.247	
2034								0.233	
2035								0.220	
2036								0.207	
2037								0.196	
2038								0.185	
2039								0.174	
2040								0.164	
2041								0.155	
2042								0.146	
2043								0.138	
2044								0.130	
2045								0.123	
2046								0.116	
2047								0.109	
2048								0.103	
2049								0.097	
2050								0.092	
2051								0.087	
2052								0.082	
2053								0.077	
2054								0.073	
2055								0.069	
2056								0.065	
2057								0.061	
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$328,040	$0	$0	$0	$0	$18,000	$346,040	...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$305,159
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	

Comments: See narrative description in Attachment 7 for a description of these costs. Volunteer labor is included in the 'Other Costs' column.

(1) The incremental change in O&M costs attributable to the project.

Table 11- Annual Cost of Project
(All costs should be in 2009 Dollars)
Proposal Title: 357--Hwy 96 Stormceptor, Willow Creek Community Services District

	Initial Costs	Operations and Maintenance Costs [1]						Discounting Calculations	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +...+ (f)	Discount Factor	Discounted Costs(g) x (h)
2009							$0	1.000	$0
2010							$0	0.943	$0
2011	$209,024	$100	$300	$2,200	$0	$390	$212,014	0.890	$188,692
2012		$100	$300	$2,200	$0	$390	$2,990	0.840	$2,512
2013		$100	$300	$2,200	$0	$390	$2,990	0.792	$2,368
2014		$100	$300	$2,200	$0	$390	$2,990	0.747	$2,234
2015		$100	$300	$2,200	$0	$390	$2,990	0.705	$2,108
2016		$100	$300	$2,200	$0	$390	$2,990	0.665	$1,988
2017		$100	$300	$2,200	$0	$390	$2,990	0.627	$1,875
2018		$100	$300	$2,200	$0	$390	$2,990	0.592	$1,770
2019		$100	$300	$2,200	$0	$390	$2,990	0.558	$1,668
2020		$100	$300	$2,200	$0	$390	$2,990	0.527	$1,576
2021		$100	$300	$2,200	$0	$390	$2,990	0.497	$1,486
2022		$100	$300	$2,200	$0	$390	$2,990	0.469	$1,402
2023		$100	$300	$2,200	$0	$390	$2,990	0.442	$1,322
2024		$100	$300	$2,200	$0	$390	$2,990	0.417	$1,247
2025		$100	$300	$2,200	$0	$390	$2,990	0.394	$1,178
2026		$100	$300	$2,200	$0	$390	$2,990	0.371	$1,109
2027		$100	$300	$2,200	$0	$390	$2,990	0.350	$1,047
2028		$100	$300	$2,200	$0	$390	$2,990	0.331	$990
2029		$100	$300	$2,200	$0	$390	$2,990	0.312	$933
2030		$100	$300	$2,200	$0	$390	$2,990	0.294	$879
2031		$100	$300	$2,200	$0	$390	$2,990	0.278	$831
2032		$100	$300	$2,200	$0	$390	$2,990	0.262	$783
2033		$100	$300	$2,200	$0	$390	$2,990	0.247	$739
2034		$100	$300	$2,200	$0	$390	$2,990	0.233	$697
2035		$100	$300	$2,200	$0	$390	$2,990	0.220	$658
2036		$100	$300	$2,200	$0	$390	$2,990	0.207	$619
2037		$100	$300	$2,200	$0	$390	$2,990	0.196	$586
2038		$100	$300	$2,200	$0	$390	$2,990	0.185	$553
2039		$100	$300	$2,200	$0	$390	$2,990	0.174	$520
2040		$100	$300	$2,200	$0	$390	$2,990	0.164	$490
2041		$100	$300	$2,200	$0	$390	$2,990	0.155	$463
2042		$100	$300	$2,200	$0	$390	$2,990	0.146	$437
2043		$100	$300	$2,200	$0	$390	$2,990	0.138	$413
2044		$100	$300	$2,200	$0	$390	$2,990	0.130	$389
2045		$100	$300	$2,200	$0	$390	$2,990	0.123	$368
2046		$100	$300	$2,200	$0	$390	$2,990	0.116	$347
2047		$100	$300	$2,200	$0	$390	$2,990	0.109	$326
2048		$100	$300	$2,200	$0	$390	$2,990	0.103	$308
2049		$100	$300	$2,200	0	$390	$2,990	0.097	$290
2050							$0	0.092	$0
2051							$0	0.087	$0
2052							$0	0.082	$0
2053							$0	0.077	$0
2054							$0	0.073	$0
2055							$0	0.069	$0
2056							$0	0.065	$0
2057							$0	0.061	$0
2058								0.058	
2059								0.054	
2060								0.051	
2061								0.048	
2062								0.046	
2063								0.043	
2064								0.041	
Project Life	$209,024	$3,900	$11,700	$85,800		$15,210		...	
								Total Present Value of Discounted Costs (Sum of Column (i))	$228,199
								Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries	
Comments: Comments: See narrative description in Attachment 7 for a description of these costs.									

(1) The incremental change in O&M costs attributable to the project.

VII. Project-Level Water-Supply Benefits (Table 12)

Tables 12-402 through 12-357 present the project-level water-supply benefits, as described above in Section IV.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 402--Ackerman Creek Habitat Restoration, Pinoleville Pomo Nation

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit				0		$0	1.000	$0
2010	No benefit				0		$0	0.943	$0
2011	No benefit				0		$0	0.890	$0
2012	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.840	$96
2013	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.792	$90
2014	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.747	$85
2015	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.705	$80
2016	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.665	$76
2017	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.627	$71
2018	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.592	$67
2019	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.558	$64
2020	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.527	$60
2021	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.497	$57
2022	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.469	$53
2023	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.442	$50
2024	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.417	$48
2025	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.394	$45
2026	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.371	$42
2027	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.350	$40
2028	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.331	$38
2029	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.312	$36
2030	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.294	$34
2031	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.278	$32
2032	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.262	$30
2033	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.247	$28
2034	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.233	$27
2035	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.220	$25
2036	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.207	$24
2037	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.196	$22
2038	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.185	$21
2039	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.174	$20
2040	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.164	$19
2041	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.155	$18
2042	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.146	$17
2043	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.138	$16
2044	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.130	$15
2045	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.123	$14
2046	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.116	$13
2047	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.109	$12
2048	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.103	$12
2049	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.097	$11
2050	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.092	$10
2051	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.087	$10

2052	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.082	$9
2053	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.077	$9
2054	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.073	$8
2055	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.069	$8
2056	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.065	$7
2057	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.061	$7
2058	Increased Instream Flows for Environmental Purposes	Acre-feet of water	0	1.52	1.52	$75	$114	0.058	$7
Project Life									
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	**$1,582**
Comments: See narrative text in Attachment 7 for a description of these benefits.									

(1) *Complete these columns if dollar value is being claimed for the benefit.*

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 345-- Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit				0		$0	1.000	$0
2010	No benefit				0		$0	0.943	$0
2011	No benefit				0		$0	0.890	$0
2012	No benefit							0.840	
2013	Avoided Water Supply Purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.792	$19,562
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.792	$87
2014	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.747	$18,451
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.747	$82
2015	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.705	$17,414
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.705	$77
2016	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.665	$16,426
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.665	$73
2017	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.627	$15,487
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.627	$69
2018	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.592	$14,622
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.592	$65
2019	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.558	$13,783
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.558	$61
2020	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.527	$13,017
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.527	$58
2021	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.497	$12,276
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.497	$54
2022	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.469	$11,584
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.469	$51
2023	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.442	$10,917
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.442	$48
2024	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.417	$10,300
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.417	$46
2025	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.394	$9,732
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.394	$43
2026	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.371	$9,164
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.371	$41
2027	Avoided water supply purchases	Total annual costs for purchasing 100,000 gallons of water	0	1	1	$24,700	$24,700	0.350	$8,645
	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	1.46	1.46	$75	$110	0.350	$38
2028	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.331	$6
2029	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.312	$5

2030	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.294	$5
2031	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.278	$5
2032	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.262	$5
2033	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.247	$4
2034	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.233	$4
2035	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.220	$4
2036	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.207	$4
2037	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.196	$3
2038	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.185	$3
2039	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.174	$3
2040	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.164	$3
2041	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.155	$3
2042	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.146	$3
2043	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.138	$2
2044	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.130	$2
2045	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.123	$2
2046	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.116	$2
2047	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.109	$2
2048	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.103	$2
2049	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.097	$2
2050	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.092	$2
2051	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.087	$1
2052	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.082	$1
2053	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.077	$1
2054	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.073	$1
2055	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.069	$1
2056	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.065	$1
2057	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.061	$1
2058	Increased Instream Flows for Environmental Purposes	Acre-feet of water left instream	0	0.23	0.23	$75	$17	0.058	$1
Project Life								…	
							Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)		**$202,356**
Comments: See narrative description of benefits in Attachment 7.									

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 393--Russian River Arundo Removal and Riparian Enhancement, Sotoyome Resource Conservation District

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit								
2010	No benefit								
2011	No benefit								
2012	No benefit								
2013	No benefit								
2014	No benefit								
2015	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.705	$30,139
2016	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.665	$28,429
2017	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.627	$26,804
2018	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.592	$25,308
2019	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.558	$23,855
2020	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.527	$22,529
2021	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.497	$21,247
2022	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.469	$20,050
2023	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.442	$18,896
2024	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.417	$17,827
2025	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.394	$16,844
2026	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.371	$15,860
2027	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.350	$14,963
2028	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.331	$14,150
2029	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.312	$13,338
2030	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.294	$12,569
2031	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.278	$11,885
2032	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.262	$11,201
2033	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.247	$10,559
2034	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.233	$9,961
2035	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.220	$9,405
2036	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.207	$8,849
2037	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.196	$8,379
2038	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.185	$7,909
2039	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.174	$7,439
2040	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.164	$7,011
2041	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.155	$6,626
2042	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.146	$6,242
2043	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.138	$5,900
2044	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.130	$5,558
2045	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.123	$5,258
2046	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.116	$4,959
2047	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.109	$4,660
2048	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.103	$4,403
2049	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.097	$4,147
2050	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.092	$3,933
2051	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.087	$3,719
2052	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.082	$3,506
2053	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.077	$3,292
2054	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.073	$3,121
2055	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.069	$2,950

2056	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.065	$2,779
2057	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.061	$2,608
2058	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	570	570	$75	$42,750	0.058	$2,480
Project Life									
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	**$491,540**
Comments: See narrative description of benefits in Attachment 7.									

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 364--Mendocino Jumpstart Integrated Water Plan, Mendocino County Water Agency

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit							1.000	$0
2010	No benefit							0.943	$0
2011	No benefit							0.890	$0
2012	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.840	$405
2013	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.792	$382
2014	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.747	$360
2015	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.705	$340
2016	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.655	$316
2017	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.627	$303
2018	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.592	$286
2019	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.558	$269
2020	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.527	$254
2021	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.497	$240
2022	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.469	$226
2023	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.442	$213
2024	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.417	$201
2025	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.394	$190
2026	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.371	$179
2027	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.350	$169
2028	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.331	$160
2029	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.312	$151
2030	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.294	$142
2031	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.278	$134
2032	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.434	6.434	$75	$483	0.262	$126
2033	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.247	$119
2034	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.233	$112
2035	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.220	$106
2036	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.207	$100
2037	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.196	$94
2038	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.185	$89
2039	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.174	$84
2040	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.164	$79
2041	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.155	$75
2042	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	6.428	6.428	$75	$482	0.146	$70
2043	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.138	$3
2044	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.130	$3
2045	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.123	$3
2046	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.116	$3
2047	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.109	$2
2048	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.103	$2
2049	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.097	$2

2050	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.092	$2
2051	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.087	$2
2052	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.082	$2
2053	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.077	$2
2054	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.073	$2
2055	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.069	$2
2056	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.065	$1
2057	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.061	$1
2058	Increased instream flows for environmental puposes	Acre-feet of water left instream	0	0.29	0.29	$75	$22	0.058	$1
Project Life								…	
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	**$6,009**
Comments: See narrative description of benefits in Attachment 7.									

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 355--Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit				0		$0	1.000	$0
2010	No benefit				0		$0	0.943	$0
2011	Increased Water Supply for Instream Flow	Acre-feet per year	0	13	13	$75	$975	0.890	$868
2012	Increased Water Supply for Instream Flow	Acre-feet per year	0	13	13	$75	$975	0.840	$819
2013	Increased Water Supply for Instream Flow	Acre-feet per year	0	13	13	$75	$975	0.792	$772
2014	Increased Water Supply for Instream Flow	Acre-feet per year	0	13	13	$75	$975	0.747	$729
2015	Increased Water Supply for Instream Flow	Acre-feet per year	0	13	13	$75	$975	0.705	$687
Project Life									
							Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)		**$3,875**

Comments: See narrative description of benefits in Attachment 7.

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 352--Gualala River Sediment Reduction Program, Gualala River Watershed Council

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit								
2010	No benefit								
2011	No benefit								
2012	No benefit								
2013	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2014	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2015	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2016	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2017	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2018	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2019	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2020	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2021	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2022	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2023	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2024	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2025	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2026	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2027	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2028	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2029	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2030	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2031	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2032	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2033	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2034	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2035	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2036	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2037	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2038	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2039	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2040	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							

2041	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2042	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2043	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2044	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2045	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2046	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2047	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2048	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2049	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2050	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2051	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2052	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2053	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2054	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2055	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2056	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2057	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
2058	Increased Instream Flows for Environmental Purposes	Unquantifiable (See Narrative Text)							
Project Life									
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	
Comments: See narrative description of benefits in Attachment 7.									

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 444--S. Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit								
2010	No benefit								
2011	No benefit								
2012	No benefit								
2013	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.792	$119
2013	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.792	$4,277
2014	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.747	$112
2014	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.747	$4,034
2015	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.705	$106
2015	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.705	$3,807
2016	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.665	$100
2016	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.665	$3,591
2017	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.627	$94
2017	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.627	$3,386
2018	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.592	$89
2018	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.592	$3,197
2019	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.558	$84
2019	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.558	$3,013
2020	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.527	$79
2020	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.527	$2,846
2021	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.497	$75
2021	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.497	$2,684
2022	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.469	$70
2022	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.469	$2,533
2023	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.442	$66
2023	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.442	$2,387
2024	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.417	$63
2024	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.417	$2,252
2025	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.394	$59
2025	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.394	$2,128
2026	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.371	$56
2026	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.371	$2,003
2027	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.350	$53
2027	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.350	$1,890
2028	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.331	$50
2028	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.331	$1,787
2029	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.312	$47
2029	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.312	$1,685
2030	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.294	$44
2030	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.294	$1,588
2031	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.278	$42
2031	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.278	$1,501

2032	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.262	$39
2032	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.262	$1,415
2033	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.247	$37
2033	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.247	$1,334
2034	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.233	$35
2034	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.233	$1,258
2035	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.220	$33
2035	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.220	$1,188
2036	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.207	$31
2036	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.207	$1,118
2037	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.196	$29
2037	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.196	$1,058
2038	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.185	$28
2038	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.185	$999
2039	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.174	$26
2039	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.174	$940
2040	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.164	$25
2040	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.164	$886
2041	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.155	$23
2041	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.155	$837
2042	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.146	$22
2042	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.146	$788
2043	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.138	$21
2043	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.138	$745
2044	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.130	$20
2044	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.130	$702
2045	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.123	$18
2045	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.123	$664
2046	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.116	$17
2046	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.116	$626
2047	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.109	$16
2047	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.109	$589
2048	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.103	$15
2048	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.103	$556
2049	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.097	$15
2049	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.097	$524
2050	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.092	$14
2050	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.092	$497
2051	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.087	$13
2051	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.087	$470
2052	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.082	$12
2052	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.082	$443
2053	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.077	$12
2053	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.077	$416
2054	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.073	$11

2054	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.073	$394
2055	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.069	$10
2055	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.069	$373
2056	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.065	$10
2056	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.065	$351
2057	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.061	$9
2057	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.061	$329
2058	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2	2	$75.00	$150	0.058	$9
2058	Avoided water-supply purchases	Gallons of water	0	90,000	90,000	$0.06	$5,400	0.058	$313
Project Life									
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	**$72,355**
Comments: See narrative description of benefits in Attachment 7.									

(1) *Complete these columns if dollar value is being claimed for the benefit.*

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 441--Waterfall Gulch Transmission Main, City of Fort Bragg

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit							1.000	$0
2010	No benefit							0.943	$0
2011	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.890	$1,121
2012	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.840	$1,058
2013	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.792	$998
2014	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.747	$941
2015	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.705	$888
2016	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.655	$825
2017	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.627	$790
2018	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.592	$746
2019	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.558	$703
2020	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.527	$664
2021	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.497	$626
2022	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.469	$591
2023	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.442	$557
2024	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.417	$525
2025	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.394	$496
2026	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.371	$467
2027	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.350	$441
2028	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.331	$417
2029	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.312	$393
2030	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.294	$370
2031	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.278	$350
2032	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.262	$330
2033	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.247	$311
2034	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.233	$294
2035	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.220	$277
2036	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.207	$261
2037	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.196	$247
2038	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.185	$233
2039	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.174	$219
2040	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.164	$207
2041	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.155	$195
2042	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.146	$184
2043	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.138	$174
2044	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.130	$164
2045	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.123	$155
2046	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.116	$146
2047	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.109	$137

2048	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.103	$130
2049	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.097	$122
2050	Increased instream flows for environmental purposes	Acre-feet of water left	0	16.8	16.8	$75	$1,260	0.092	$116
Project Life								…	
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)	**$17,873**
Comments: See narrative description of benefits in Attachment 7.									

[1] *Complete these columns if dollar value is being claimed for the benefit.*

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 405--Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project,, Redwood Forest Foundation, Inc

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value [1]	(h) Annual $ Value (f) x (g) [1]	(i) Discount Factor [1]	(j) Discounted Benefits (h) x (i) [1]
2009	No benefit				0		$0	1.000	$0
2010	No benefit				0		$0	0.943	$0
2011	No benefit				0		$0	0.890	$0
2012	No benefit				0		$0	0.840	$0
2013	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2.85	2.85	$75	$214	0.792	$169
2014	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.747	$319
2015	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.705	$301
2016	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.665	$284
2017	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.627	$268
2018	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.592	$253
2019	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	5.70	5.7	$75	$428	0.558	$239
2020	Increased instream flows for environmental purposes	Acre-feet of water left instream	0	2.85	2.85	$75	$214	0.527	$113
2021	No benefit				0		$0	0.497	$0
2022	No benefit				0		$0	0.469	$0
2023	No benefit				0		$0	0.442	$0
2024	No benefit				0		$0	0.417	$0
2025	No benefit				0		$0	0.394	$0
2026	No benefit				0		$0	0.371	$0
2027	No benefit				0		$0	0.350	$0
2028	No benefit				0		$0	0.331	$0
2029	No benefit				0		$0	0.312	$0
2030	No benefit				0		$0	0.294	$0
2031	No benefit				0		$0	0.278	$0
2032	No benefit				0		$0	0.262	$0
2033	No benefit				0		$0	0.247	$0
2034	No benefit				0		$0	0.233	$0
2035	No benefit				0		$0	0.220	$0
2036	No benefit				0		$0	0.207	$0
2037	No benefit				0		$0	0.196	$0
2038	No benefit				0		$0	0.185	$0
2039	No benefit				0		$0	0.174	$0
2040	No benefit				0		$0	0.164	$0
2041	No benefit				0		$0	0.155	$0
2042	No benefit				0		$0	0.146	$0
2043	No benefit				0		$0	0.138	$0
2044	No benefit				0		$0	0.130	$0
2045	No benefit				0		$0	0.123	$0
2046	No benefit				0		$0	0.116	$0
2047	No benefit				0		$0	0.109	$0
2048	No benefit				0		$0	0.103	$0
2049	No benefit				0		$0	0.097	$0
2050	No benefit				0		$0	0.092	$0
2051	No benefit				0		$0	0.087	$0
2052	No benefit				0		$0	0.082	$0
2053	No benefit				0		$0	0.077	$0
2054	No benefit				0		$0	0.073	$0
2055	No benefit				0		$0	0.069	$0
2056	No benefit				0		$0	0.065	$0
2057	No benefit				0		$0	0.061	$0
2058	No benefit				0		$0	0.058	$0
Project Life									
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (i) for all Benefits shown in table)	**$1,947**

Comments: See narrative description of benefits in Attachment 7.

[1] *Complete these columns if dollar value is being claimed for the benefit.*

Table 12 - Annual Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 357--Hwy 96 Stormceptor, Willow Creek Community Services District

(a) Year	(b) Type of Benefit	(c) Measure of Benefit (Units)	(d) Without Project	(e) With Project	(f) Change Resulting from Project (e) – (d)	(g) Unit $ Value (1)	(h) Annual $ Value (f) x (g) (1)	(i) Discount Factor (1)	(j) Discounted Benefits (h) x (i) (1)
2009	No benefit							1.000	
2010	No benefit							0.943	
2011	No benefit							0.890	
2012	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.840	
2013	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.792	
2014	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.747	
2015	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.705	
2016	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.665	
2017	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.627	
2018	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.592	
2019	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.558	
2020	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.527	
2021	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.497	
2022	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.469	
2023	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.442	
2024	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.417	
2025	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.394	
2026	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.371	
2027	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.350	
2028	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.331	
2029	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.312	
2030	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.294	
2031	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.278	
2032	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.262	
2033	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.247	
2034	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.233	
2035	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.220	
2036	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.207	
2037	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.196	
2038	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.185	
2039	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.174	
2040	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.164	
2041	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.155	
2042	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.146	
2043	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.138	
2044	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.130	
2045	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.123	
2046	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.116	
2047	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.109	
2048	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.103	
2049	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.097	

2050	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.092	
2051	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.087	
2052	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.082	
2053	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.077	
2054	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.073	
2055	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.069	
2056	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.065	
2057	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.061	
2058	Avoided costs of service disruption	Unquantifiable (See Narrative Text)						0.058	
Project Life								…	
							Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)		**$0**
Comments: See narrative description of benefits in Attachment 7.									

(1) Complete these columns if dollar value is being claimed for the benefit.

VIII. Other Project-Level Water-Supply Benefits (Table 14)

Tables 14-402 through 14-357 present the other project-level water supply benefits, as described above in Section IV.

Table 14 - Annual Other Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 345--Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District

(a) Year	(b) Type of Benefit	(c) Description of Benefit	(d) Annual Benefits ($) (1)	(e) Discount Factor (1)	(f) Discounted Benefits (d) x (e) (1)
2009	No benefit	No benefit	$0	1.000	$0
2010	No benefit	No benefit	$0	0.943	$0
2011	No benefit	No benefit	$0	0.890	$0
2012	No benefit	No benefit	$0	0.840	$0
2013	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.792	$23,763
2014	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.747	$22,418
2015	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.705	$21,149
2016	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.665	$19,952
2017	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.627	$18,822
2018	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.592	$17,757
2019	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.558	$16,752
2020	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.527	$15,804
2021	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.497	$14,909
2022	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.469	$14,065
2023	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.442	$13,269
2024	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.417	$12,518
2025	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.394	$11,809
2026	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.371	$11,141
2027	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.350	$10,510
2028	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.331	$9,915
2029	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.312	$9,354
2030	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.294	$8,825
2031	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.278	$8,325
2032	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.262	$7,854
2033	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.247	$7,409
2034	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.233	$6,990

2035	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.220	$6,594
2036	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.207	$6,221
2037	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.196	$5,869
2038	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.185	$5,537
2039	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.174	$5,223
2040	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.164	$4,928
2041	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.155	$4,649
2042	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.146	$4,386
2043	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.138	$4,137
2044	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.130	$3,903
2045	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.123	$3,682
2046	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.116	$3,474
2047	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.109	$3,277
2048	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.103	$3,092
2049	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.097	$2,917
2050	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.092	$2,752
2051	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.087	$2,596
2052	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.082	$2,449
2053	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.077	$2,310
2054	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.073	$2,180
2055	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.069	$2,056
2056	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.065	$1,940
2057	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.061	$1,830
2058	Avoided Water Supply Operations Costs	Reduced water treatment costs per year from fixing leaking pipes and water-supply infrastructure.	$30,000	0.058	$1,726
Project Life					
				Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (f) for all Benefits shown in table)	**$391,037**
Comments: See narrative description in Attachment 7 for a description of these benefits.					

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 14 - Annual Other Water Supply Benefits
(All benefits should be in 2009 dollars)
Project: 306--Water Treatment System Upgrade, Happy Camp Community Services District

(a) Year	(b) Type of Benefit	(c) Description of Benefit	(d) Annual Benefits ($) (1)	(e) Discount Factor (1)	(f) Discounted Benefits (d) x (e) (1)
2009	No benefit			1.000	
2010	No benefit			0.943	
2011	No benefit			0.890	
2012	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)	0.840	
2013	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.792	$1,552
2014	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.747	$1,464
2015	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.705	$1,382
2016	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.665	$1,303
2017	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.627	$1,229
2018	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.592	$1,160
2019	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.558	$1,094
2020	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.527	$1,033
2021	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.497	$974
2022	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.469	$919
2023	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		

	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.442	$866
2024	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.417	$817
2025	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.394	$772
2026	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.371	$727
2027	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.350	$686
2028	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.331	$649
2029	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.312	$612
2030	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.294	$576
2031	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.278	$545
2032	Avoided costs associated with emergency repair		Unquantifiable (See Narrative Text)		
	Avoided Costs of Service Disruption	One week provision of emergency water supplies, assuming a 10% probability of a 10-year flood occuring in any given year	$1,960	0.262	$514
Project Life					
Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (f) for all Benefits shown in table)					**$18,875**
Comments: See narrative description in Attachment 7 for a description of these benefits.					

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 14 - Annual Other Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 355--Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District

(a) Year	(b) Type of Benefit	(c) Description of Benefit	(d) Annual Benefits ($) (1)	(e) Discount Factor (1)	(f) Discounted Benefits (d) x (e) (1)
2009	No benefit	No benefit			
2010	No benefit	No benefit			
2011	Reduced electricity costs associated with pumping water	By reducing the amount of water pumped for irrigation, irrigators would reduce their electricity costs. These costs are valued at $35 per acre-foot of water pumped, but could range from $35 to $50 per acre-foot. The project would reduce 13 acre-feet per year.	$455	0.890	$405
2012	Reduced electricity costs associated with pumping water	By reducing the amount of water pumped for irrigation, irrigators would reduce their electricity costs. These costs are valued at $35 per acre-foot of water pumped, but could range from $35 to $50 per acre-foot. The project would reduce 13 acre-feet per year.	$455	0.840	$382
2013	Reduced electricity costs associated with pumping water	By reducing the amount of water pumped for irrigation, irrigators would reduce their electricity costs. These costs are valued at $35 per acre-foot of water pumped, but could range from $35 to $50 per acre-foot. The project would reduce 13 acre-feet per year.	$455	0.792	$360
2014	Reduced electricity costs associated with pumping water	By reducing the amount of water pumped for irrigation, irrigators would reduce their electricity costs. These costs are valued at $35 per acre-foot of water pumped, but could range from $35 to $50 per acre-foot. The project would reduce 13 acre-feet per year.	$455	0.747	$340
2015	Reduced electricity costs associated with pumping water	By reducing the amount of water pumped for irrigation, irrigators would reduce their electricity costs. These costs are valued at $35 per acre-foot of water pumped, but could range from $35 to $50 per acre-foot. The project would reduce 13 acre-feet per year.	$455	0.705	$321
Project Life				…	
		Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (f) for all Benefits shown in table)			**$1,808**

Comments: See narrative description in Attachment 7 for a description of these benefits.

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 14 - Annual Other Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 441--Waterfall Gulch Transmission Main, City of Fort Bragg

(a) Year	(b) Type of Benefit	(c) Description of Benefit	(d) Annual Benefits ($) (1)	(e) Discount Factor (1)	(f) Discounted Benefits (d) x (e) (1)
2009					
2010					
2011					
2012	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.840	$3,276
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.840	$3,528
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.840	$2,520
2013	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.792	$3,089
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.792	$3,326
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.792	$2,376
2014	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.747	$2,913
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.747	$3,137
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.747	$2,241
2015	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.705	$2,750
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.705	$2,961
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.705	$2,115
2016	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.665	$2,594
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.665	$2,793
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.665	$1,995
2017	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.627	$2,445
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.627	$2,633
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.627	$1,881
2018	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.592	$2,309
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.592	$2,486
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.592	$1,776
2019	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.558	$2,176
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.558	$2,344
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.558	$1,674
2020	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.527	$2,055
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.527	$2,213
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.527	$1,581
2021	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.497	$1,938

	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.497	$2,087
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.497	$1,491
2022	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.469	$1,829
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.469	$1,970
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.469	$1,407
2023	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.442	$1,724
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.442	$1,856
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.442	$1,326
2024	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.417	$1,626
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.417	$1,751
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.417	$1,251
2025	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.394	$1,537
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.394	$1,655
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.394	$1,182
2026	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.371	$1,447
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.371	$1,558
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.371	$1,113
2027	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.350	$1,365
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.350	$1,470
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.350	$1,050
2028	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.331	$1,291
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.331	$1,390
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.331	$993
2029	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.312	$1,217
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.312	$1,310
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.312	$936
2030	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.294	$1,147
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.294	$1,235
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.294	$882
2031	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.278	$1,084
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.278	$1,168
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.278	$834
2032	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.262	$1,022
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.262	$1,100

	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.262	$786
2033	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.247	$963
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.247	$1,037
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.247	$741
2034	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.233	$909
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.233	$979
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.233	$699
2035	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.220	$858
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.220	$924
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.220	$660
2036	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.207	$807
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.207	$869
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.207	$621
2037	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.196	$764
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.196	$823
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.196	$588
2038	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.185	$722
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.185	$777
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.185	$555
2039	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.174	$679
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.174	$731
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.174	$522
2040	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.164	$640
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.164	$689
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.164	$492
2041	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.155	$605
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.155	$651
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.155	$465
2042	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.146	$569
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.146	$613
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.146	$438
2043	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.138	$538
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.138	$580
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.138	$414

2044	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.130	$507
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.130	$546
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.130	$390
2045	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.123	$480
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.123	$517
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.123	$369
2046	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.116	$452
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.116	$487
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.116	$348
2047	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.109	$425
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.109	$458
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.109	$327
2048	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.103	$402
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.103	$433
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.103	$309
2049	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.097	$378
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.097	$407
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.097	$291
2050	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.092	$359
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.092	$386
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.092	$276
2051	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.087	$339
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.087	$365
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.087	$261
2052	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.082	$320
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.082	$344
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.082	$246
2053	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.077	$300
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.077	$323
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.077	$231
2054	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.073	$285
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.073	$307
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.073	$219
2055	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.069	$269

	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.069	$290
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.069	$207
2056	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.065	$254
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.065	$273
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.065	$195
2057	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.061	$238
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.061	$256
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.061	$183
2058	Reduced electricity costs associated with pumping	Avoided power costs associated with pumping water	$3,900	0.058	$226
	Avoided water-supply operations costs	Avoided costs associated with operations and maintenance of finding and repairing leaks	$4,200	0.058	$244
	Avoided costs associated with emergency repairs	Avoided costs associated with emergency response for leaks	$3,000	0.058	$174
Project Life				…	
				Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (f) for all Benefits shown in table)	**$154,035**
Comments: See narrative description in Attachment 7 for a description of these benefits.					

(1) Complete these columns if dollar value is being claimed for the benefit.

Table 14 - Annual Other Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 362--Blue Lake Fieldbrook Pipeline Support Retrofit, Humboldt Bay Municipal Water District

(a) Year	(b) Type of Benefit	(c) Description of Benefit	(d) Annual Benefits ($) (1)	(e) Discount Factor (1)	(f) Discounted Benefits (d) x (e) (1)
2009	No benefit		$0	1.000	$0
2010	No benefit		$0	0.943	$0
2011	No benefit		$0	0.890	$0
2012	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.840	$5,598
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.840	$83,769
2013	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.792	$5,278
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.792	$78,982
2014	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.747	$4,978
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.747	$74,495
2015	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.705	$4,698
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.705	$70,306
2016	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.665	$4,432
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.665	$66,317
2017	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.627	$4,178
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.627	$62,528
2018	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.592	$3,945
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.592	$59,037
2019	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.558	$3,719
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.558	$55,647
2020	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.527	$3,512
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.527	$52,555
2021	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.497	$3,312
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.497	$49,563
2022	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.469	$3,125
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.469	$46,771
2023	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.442	$2,945
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.442	$44,078
2024	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.417	$2,779
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.417	$41,585

2025	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.394	$2,626
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.394	$39,292
2026	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.371	$2,472
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.371	$36,998
2027	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.350	$2,332
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.350	$34,904
2028	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.331	$2,206
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.331	$33,009
2029	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.312	$2,079
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.312	$31,114
2030	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.294	$1,959
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.294	$29,319
2031	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.278	$1,853
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.278	$27,724
2032	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.262	$1,746
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.262	$26,128
2033	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.247	$1,646
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.247	$24,632
2034	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.233	$1,553
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.233	$23,236
2035	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.220	$1,466
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.220	$21,940
2036	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.207	$1,379
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.207	$20,643
2037	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.196	$1,306
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.196	$19,546
2038	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.185	$1,233
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.185	$18,449
2039	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.174	$1,160
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.174	$17,352
2040	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.164	$1,093
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.164	$16,355

2041	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.155	$1,033
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.155	$15,457
2042	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.146	$973
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.146	$14,560
2043	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.138	$920
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.138	$13,762
2044	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.130	$866
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.130	$12,964
2045	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.123	$820
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.123	$12,266
2046	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.116	$773
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.116	$11,568
2047	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.109	$726
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.109	$10,870
2048	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.103	$686
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.103	$10,272
2049	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.097	$646
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.097	$9,673
2050	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.092	$613
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.092	$9,175
2051	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.087	$580
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.087	$8,676
2052	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.082	$546
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.082	$8,177
2053	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.077	$513
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.077	$7,679
2054	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.073	$486
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.073	$7,280
2055	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.069	$460
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.069	$6,881
2056	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.065	$433
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.065	$6,482

2057	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.061	$407
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.061	$6,083
2058	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.058	$387
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.058	$5,784
2059	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.054	$360
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.054	$5,385
2060	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.051	$340
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.051	$5,086
5061	Avoided costs associated with emergency repair	Avoided costs associated with repairing the pipeline after an earthquake	$6,664	0.048	$320
	Avoided costs of service disruption	Avoided costs associated with loss of potable water services and wastewater service loss	$99,725	0.048	$4,787
Project Life				…	
				Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (f) for all Benefits shown in table)	**$1,492,638**
Comments:Comments: See narrative description in Attachment 7 for a description of these benefits.					

(1) Complete these columns if dollar value is being claimed for the benefit.

IX. Total Project-Level Water-Supply-Related Benefits (Table 15)

Tables 15-402 through 15-357 present the total project-level water-supply-related benefits, as calculated from Tables 12 and 14 and described above in Section IV.

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 402--Ackerman Creek Habitat Restoration, Pinoleville Pomo Nation

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$1,582.00	$0.00	$0.00	**$1,582.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 345--Bodega Bay Water Resources Management Project, Gold Ridge Resource Conservation District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$202,356.00	$0.00	$391,037.00	**$593,393.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 393--Russian River Arundo donax Removal and Riparian Enhancement Program, Sotoyome Resource Conservation District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$491,540.00	$0.00	$0.00	**$491,540.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 364--Mendocino Jumpstart Integrated Water Plan, Mendocino County Water Agency

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$6,009.00	$0.00	$0.00	**$6,009.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 306--Water Treatment System Upgrade, Happy Camp Community Services District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$0.00	$0.00	$18,875.00	**$18,875.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 355--Real-Time Weather Data for Irrigation Water Management, Del Norte Resource Conservation District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$3,875.00	$0.00	$1,808.00	**$5,683.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 352--Gualala River Sediment Reduction Program, Gualala River Watershed Council

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
Unquantifiable	$0.00	$0.00	**Unquantifiable**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 444--S. Mattole Integrated Watershed Management Initiative, Mattole Restoration Council

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$72,355.00	$0.00	$0.00	**$72,355.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 362--Blue Lake Fieldbrook Pipeline Support Retrofit, Humboldt Bay Municipal Water District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$0.00	$0.00	$1,492,638.00	**$1,492,638.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 441--Waterfall Gulch Transmission Main, City of Fort Bragg

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$17,873.00	$0.00	$154,035.00	**$171,908.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 405--Sustainable Forests, Clean Water and Carbon Sequestration Demonstration Project,, Redwood Forest Foundation, Inc

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
$1,947.00	$0.00	$0.00	**$1,947.00**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits

Table 15. Total Water Supply Benefits

(All benefits should be in 2009 dollars)

Project: 357--Hwy 96 Stormceptor, Willow Creek Community Services District

Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d) (a) + (c) or (b) + (c)
Unquantifiable	$0.00	$0.00	**Unquantifiable**

Comments: See Tables 12 and 14 and the narrative text in Attachment 7 for a description of these benefits